

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

ULUPAU CENTRAL/SOUTH FAMILY HOUSING AREA MARINE CORPS BASE HAWAII, KANEOHE BAY

Prepared for



Honolulu, Hawaii

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Prepared by

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ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-containing material
AIRS	Aerometric Information Retrieval System
AST	Aboveground Storage Tank
ASTM	American Society of Testing and Materials
AUL	Activity and Use Limitation
BS	Bachelor of Science
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
COR	Corrective Action Report
DDT	Dichloro-diphenyl-trichloroethane
EP	Environmental Professional
ERNS	Emergency Response Notification System
°F	Degrees Fahrenheit
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FINDS	Facility Index System
FOS	Finding of Suitability
FRS	Facility Registry System
FTTS	FIFRA/TSCA Tracking System
GEN	Generator
HDOH	Hawaii Department of Health
HEER	Office of Hazard Evaluation and Emergency Response, HDOH
HMIRS	Hazardous Materials Incident Response System
HUD	United States Department of Housing and Urban Development
kg	Kilograms
km	Kilometer
LBP	Lead-based paint
lbs	Pounds
LQG	Large Quantity Generator
LUST	Leaking underground storage tank
m	Meter
MCBH	Marine Corps Base Hawaii
MS	Master of Science

***PHASE I ENVIRONMENTAL SITE ASSESSMENT
ULUPAU CENTRAL/SOUTH FAMILY HOUSING AREA
MARINE CORPS BASE HAWAII, KANEOHE BAY***

µg/ft ²	Micrograms per Square Foot
NCDB	National Compliance Data Base System
NFRAP	No Further Remedial Action Planned
NLR	No Longer Report
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NWI	National Wetlands Inventory
PCB	Polychlorinated biphenyl
pCi/L	picoCuries per liter
PE	Professional Engineer
RADINFO	Nuclear Regulatory Commission Database of Permitted Nuclear Facilities
REC	Recognized Environmental Condition
RCRA	Resource Conservation and Recovery Act
SQG	Small Quantity Generator
SSTS	Section Seven Tracking System
TCLP	Toxic Characteristic Leaching Procedure
TIGER	Topologically Integrated Geographic Encoding and Referencing System
TIS	Track Information Services, LLC
TRIS	Toxic Release Inventory System
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage, and/or Disposal
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground storage tank
WRCC	Western Regional Climate Center
WRF	Water Reclamation Facility

1.0 SUMMARY

Parsons conducted a Phase I Environmental Site Assessment in conformance with the American Society of Testing and Materials (ASTM) Standard Practice E 1527-05 for the following site:

- The Ulupau Central/South Family Housing Area, located on Marine Corps Base Hawaii (MCBH), Kaneohe Bay

The Ulupau Central/South Family Housing Area is approximately 31.937 acres. Exhibit 1, Site Map, presents the general location of the site. A legal description and aerial view of the site is presented on Exhibit 2, Site Survey Map.

The site is located in southeastern O'ahu, on MCBH Kaneohe Bay, on the Mokapu peninsula adjacent to Kaneohe Bay. The housing area consists of 61 housing units in Ulupau central and 235 housing units in Ulupau south that are occupied by Marine Corps personnel and family. The units were built in 1976. The square footage of the housing units ranges from 1,261 to 1,427 square feet. The units have 3 to 4 bedrooms with 2 to 2.5 bathrooms. There are no historic homes at the Ulupau Central/South Family Housing Area.

Ohana Military Communities LLC will be the lessee of the site and will be the owner of 296 housing units, all of which will be demolished and 16 will be replaced.

The housing units are typically of wood construction; however the first floor of some two-story buildings is cinderblock. Roofing material includes a wood base covered with asphalt shingles. Detached carports for residential parking were constructed of a combination of cinderblock walls and wood roofs with asphalt shingles.

Available information for the subject property and surroundings was collected and evaluated to identify Recognized Environmental Conditions (RECs). According to the American Society for Testing and Materials (ASTM) Standard Practice E 1527-05, the term REC means "the presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property."

Based on the definition of a REC in the ASTM Standard Practice E 1527-05, the following RECs have been identified for the site:

- During the site reconnaissance, potential for asbestos-containing material (ACM) was noted in the following building materials: roof tar, sink undercoating, drywall joint compound, and in the mastic for tiling and rubber baseboards. An asbestos assessment for the subject property was completed in April 1997 by the Department of the Navy Public Works Center. The assessment identified

presence of ACM in some units in floor tile and mastic, and roof shingles and felt. It is recommended that the presence of ACM be disclosed to prospective tenants. It is also recommended that any renovation or demolition activities be conducted in accordance with the Asbestos Management Plan.

- During the site reconnaissance, lead-based paint (LBP) was suspected on the following building components: interior wood components (e.g. door and window casings, shelves, beams, closets and associated shelving). Lead assessments conducted in 1997 and 2006 (Navy Public Works Center-MCB Kaneohe, 1997 and Naval Facilities Engineering Command Pacific Division, 2006) indicated that building components tested were found to contain LBP. However, based on Department of Housing and Urban Development (HUD) Multifamily Decision Tree, LBP is not present community-wide. Concentrations of lead in dust and soil were below the current HUD action levels. It is recommended that the presence of LBP be disclosed to prospective tenants. It is also recommended that any renovation or demolition activities be conducted in accordance with the Lead-Based Paint Management Plan. It is recommended that LBP waste be tested in accordance with the Toxicity Characteristic Leaching Procedure (TCLP) prior to disposal to determine disposal options.
- During the site reconnaissance, fluorescent lighting that may contain polychlorinated biphenyl (PCB)-containing ballasts was observed in various locations of the site. It is recommended that potential PCB-containing ballasts be properly managed in accordance with the Hazardous Materials Management Plan during renovation or demolition activities.
- Due to the historic use of chlordane as a termiticide in homes, chlordane may exist in the soil near the foundation and under the building slabs. Surface and near-surface soil sampling for chlordane and other pesticides, including dichloro-diphenyl-trichloroethane (DDT), dieldrin, and heptachlor is recommended.
- Smoke detectors in older units have the potential to contain a radioactive source. Prior to renovation or demolition, smoke detectors should be inspected for the radioactive sources, and handled and disposed of in accordance with the Hazardous Materials Management Plan.
- Light switches and lamps in older units have the potential to contain mercury. During demolition or renovation, these switches and lamps should be removed and disposed of properly in accordance with the Hazardous Materials Management Plan.

A Phase I Environmental Site Assessment does not include any sampling and analysis of potentially contaminated materials. The scope of work of this Phase I Environmental Site Assessment did not specifically include sampling and analysis, therefore no independent soil or groundwater or other sampling and analyses were conducted.

2.0 INTRODUCTION

2.1 PURPOSE

Parsons conducted a Phase I Environmental Site Assessment in conformance with the American Society of Testing and Materials (“ASTM”) Standard Practice E 1527-05 for the purpose of identifying RECs at the following site:

- The Ulupau Central/ South Family Housing Area, located on Marine Corps Base Hawaii (MCBH), Kaneohe Bay

The Ulupau Central/South Family Housing Area is approximately 31.937 acres. Exhibit 1, Site Map, presents the general location of the site. A legal description and aerial view of the site is presented on Exhibit 2, Site Survey Map.

Exhibit 3 provides the approximate location of the site on a United States Geological Survey (USGS) topographic map.

The term REC, as defined in ASTM Standard Practice E 1527-05, means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with applicable laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health and the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

2.2 PHASE I TASKS

Parsons performed the following tasks:

2.2.1 Records review

Available current and historical documents pertinent to environmental activities conducted in or near the site were reviewed. Topics of interest include chemical usage or inventories, waste management records, Resource Conservation and Recovery Act (RCRA) or Comprehensive Environmental Response Compensation and Liability Act (CERCLA) activities.

2.2.2 Site reconnaissance and Interviews

Site reconnaissance of the site to visually and physically observe and document conditions on the property was performed. One two-story housing unit in a four-plex was available for inspection. Interviews were conducted in keeping with the requirements of ASTM Standard Practice E 1527-05 § 7.1-7.2.

2.2.3 File search and records review

A search of federal, state, and local regulatory agency electronic databases was performed. This database search identifies locations that are regulated under various environmental laws, notably CERCLA, RCRA, and the Toxic Substances Control Act (TSCA). It also identifies locations where a release of hazardous substances has occurred or is suspected.

2.2.4 Historical records review

A historic information review was conducted to identify all obvious uses of the site from the present back to the first developed use or 1940, whichever is earlier. Available historical aerial photographs were reviewed, and any locations of activities that may pose an environmental concern to the site were identified.

2.2.5 Evaluate data and prepare report

Significant findings from the above-stated tasks were summarized, RECs were identified, and recommendations were made for additional site assessment activities, if needed.

2.3 SPECIAL TERMS AND CONDITIONS

- The information and conclusions presented in this report are valid only for the circumstances of the site investigated as described in this report, as of the dates in this report.
- Parsons evaluated the reasonableness and completeness of available relevant information, but does not assume responsibility for the truth or accuracy of any information provided to Parsons by others or for the lack of information that is intentionally, unintentionally, or negligently withheld from Parsons by others.
- After acceptance of this report, if Parsons obtains information that it believes warrants further exploration and development, Parsons will endeavor to provide that information, but Parsons will not be liable for not doing so.

2.4 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

To achieve the study objectives stated in this report, Parsons based its conclusions on the best information available during the period of the investigation and within the limits prescribed by the ASTM Standard.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Professional judgment was exercised in gathering and evaluating the information obtained, and Parsons commits itself to the usual care, thoroughness, and competence of the engineering profession.

2.5 LIMITING CONDITIONS AND METHODOLOGY USED

The Phase I Environmental Site Assessment investigations were completed in accordance with the ASTM Standard Practice E 1527-05.

2.6 USER RELIANCE

This report was prepared for Ohana Military Communities, LLC, its Managing Member and other Members of Ohana Military Communities, LLC. It may be relied upon by Ohana Military Communities, LLC, its Managing Member and other Members of Ohana Military Communities, LLC, the United States of America, Department of the Navy, (b) (4)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] and each of their respective officers, directors, employees, affiliates, successors, assigns, legal counsel and advisors.

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3.0 SITE DESCRIPTION

3.1 LOCATION AND LEGAL DESCRIPTION OF PROPERTY

The Ulupau Central/South Family Housing Area is located at Latitude (North) 21.451803, Longitude (West) 157.738921. The site is located in southeastern O'ahu, on MCBH Kaneohe Bay, on the Mokapu peninsula adjacent to Kaneohe Bay. Exhibit 2 provides a legal description of the property and a site survey map.

Ohana Military Communities LLC will be the lessee of the site and will be the owner of 296 housing units, all of which will be demolished and 16 will be replaced.

3.2 SITE AND VICINITY CHARACTERISTICS

Table 3-1 provides a description of the properties directly adjacent to the site.

**Table 3-1
Adjacent Properties**

Direction	Description of Adjacent Properties
North	Ulupau North and Nani Ulupau family housing areas
East	Daly Road and sloped, undeveloped land that supports military uses to the tip of Mokapu Point
South	Middaugh Road and Fort Hase Cove coastline
West	Mololani military family housing area

3.3 DESCRIPTIONS OF STRUCTURES, ROADS, OTHER IMPROVEMENTS ON THE SITE

The site consists of 61 and 235 housing units in Ulupau Central and Ulupau South Family Housing Areas, respectively, that are occupied by Marine Corps personnel and family. The housing units, configured in duplexes, four-, and eight-plexes, were built in 1976. The square footage of the units ranges from 1,261 to 1,427 square feet. The units have 3 to 4 bedrooms with 2 to 2.5 bathrooms. There are no historic homes at the Ulupau Central and South Family Housing Areas.

The housing units are typically of wood construction. Two-story buildings have cinderblock walls on the first floor. Roofing material consists of asphalt shingles. Detached carports for residential parking are constructed of a combination of cinderblock walls and columns and wood roofs with asphalt shingles.

Access to the housing area is through Daly Road from Middaugh Road from the south and from Pond Road from the North. These roads leading to the housing area and the streets within the housing area are two-way asphalt-paved roads.

Potable water is supplied to the site through facilities owned and maintained by the City and County of Honolulu Board of Water Supply. Upon entering the base potable water system, the water is chlorinated, fluoridated and tested for fecal coliform and trihalomethanes. Sewage from the site is disposed through a sewer collection system that connects to the MCBH Water Reclamation Facility (WRF). Reclaimed water from the WRF is used for watering the Klipper Golf Course.

3.4 INFORMATION REPORTED BY USER REGARDING ENVIRONMENTAL LIENS OR SPECIALIZED KNOWLEDGE OR EXPERIENCE

3.4.1 Title Records

The site is currently owned by the Federal government and managed by the Department of Defense. The site was part of the Kuwaaohē Military Reservation which was withdrawn from public lands and set aside for military purposes under Executive Order No. 2900, dated July 2, 1918. Succeeding Executive Orders associated with the military reservation related to correction of the description of the boundaries of the reservation and addition of lands. In addition, a part of the site was conveyed through a Declaration of Taking dated October 1, 1945. No other activity and use limitations were indicated.

3.4.2 Environmental Liens

A chain of title was obtained for the site. No information regarding environmental liens was found against the site.

3.4.3 Specialized Knowledge or Experience

Other than the information provided by the Department of the Navy contained herein, no specialized knowledge or experience was reported or discovered for the site.

3.4.4 Commonly Known or Reasonably Ascertainable Information

Other than the information provided by the Department of the Navy contained herein, no information was reported concerning commonly known or reasonably ascertainable information.

3.4.5 Valuation Reduction for Environmental Issues

Ohana Military Communities, LLC has no knowledge of any valuation reduction of the site as a result of any environmental issues.

3.4.6 Owner, Property Manager, and Occupant Information

Other than the information provided by the Department of the Navy contained herein, no information was reported concerning the owner, property manager, and occupants.

3.4.7 Reason for Performing Phase I

Ohana Military Communities is entering into a real estate transaction with the United States Navy. This Phase I is performed to allow Ohana Military Communities, consistent with good commercial and customary practice, to satisfy the all appropriate inquiry into the previous ownership and use of the property.

3.4.8 Other

No information was reported by Ohana Military Communities, LLC concerning other issues.

3.5 CURRENT USES OF THE PROPERTY

The site consists of 61 and 235 housing units in Ulupau Central and Ulupau South Family Housing Areas, respectively, occupied by Marine Corps personnel and family.

3.6 PAST USES OF THE PROPERTY

Historical uses of the property were evaluated through review of databases searched by Track Info Services, LLC (TIS) and presented in an Environmental FirstSearch™ Report.

In 1918, Fort Hase was commissioned and was known as the Kuwaahoe Military Reservation. In 1939, the Navy constructed a small seaplane base and upon its completion, Naval Air Station Kaneohe's role was expanded to include the administration of the Kaneohe Bay Naval Defense Sea Area. After the war, air station activities consisted of limited air operations, a small security detachment, and a federal communications center. In 1951, the station was proposed as an ideal site for combined air-ground team, and the Marines assumed control of the air station activities when naval aviation moved to Barbers Point Naval Air Station. On January 15, 1952, Marine Corps Air Station, Kaneohe Bay was commissioned.

The housing units were constructed in 1976. As presented in the 1950, 1969 and 1999 aerial photos (Section 4.4.1), the site was vacant and undeveloped prior to construction of the housing units in 1976.

3.7 CURRENT AND PAST USES OF THE ADJOINING PROPERTIES

Table 3-1 in Section 3.2, *Site and Vicinity Characteristics*, provides a description of the current uses of the adjoining properties. Historical aerial photographs indicate that the adjoining properties to the north, east and south were primarily undeveloped. The adjoining property to the west is a housing development as depicted in the 1969 historical aerial photograph.

Section 4.5 provides additional information regarding the historical uses of adjoining properties.

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4.0 RECORDS REVIEW

This section presents information concerning the site and its surroundings from various recorded sources. Electronic databases representing standard environmental record sources and physical setting sources were reviewed. Information pertinent to the site is summarized in this section.

4.1 STANDARD ENVIRONMENTAL RECORD SOURCES

Parsons has retained the services of an environmental database company to search applicable regulatory agency lists and standard environmental record sources to identify locations of potential concern within the ASTM Standard Practice E 1527-05 (Standard) minimum search distances. The following summarizes the environmental database report, dated May 24, 2007. Appendix A presents the complete environmental data report. The report includes maps indicating the search distance of 0.12, 0.25, 0.5, and 1 mile (0.2, 0.4, 0.8, and 1.6 kilometers [km]) from the center of the site, which include the ASTM database required search distances of zero, 0.125, 0.25, 0.5, and 1 mile (zero, 0.2, 0.4, 0.8, and 1.6 km).

The following subsections summarize sites listed within the respective database search distances. Exhibit 4 presents the location of mapped sites, if any, relative to the site.

4.1.1 Federal ASTM Records

National Priorities List

The National Priorities List (NPL) listing, also known as the Superfund list, is a subset of the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database. The NPL database identifies over 1,200 sites nationwide for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As a result, the environmental database company provides coverage for over 1,000 NPL site boundaries produced by the United States Environmental Protection Agency (USEPA) Environmental Photographic Interpretation Center.

Currently, there are no NPL sites within the 1-mile (1.6-km) search distance from the site.

Comprehensive Environmental Response, Compensation, and Liability Information System

The CERCLIS database contains data on potentially hazardous waste sites that have been reported to USEPA by states, municipalities, private companies, and private persons.

Notification to USEPA is made pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The CERCLIS database contains sites that are either proposed to be on or on the NPL, and sites that are in the screening and assessment phase for possible inclusion on the NPL.

Currently, there are no listed CERCLIS sites located within the 0.5-mile (0.8-km) search distance from the site.

CERCLIS – No Further Remedial Action Planned

Beginning in February 1995, CERCLIS sites designated *No Further Remedial Action Planned* (NFRAP) have been removed from the CERCLIS database. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action of NPL consideration. The USEPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived these as historical records so that USEPA does not needlessly repeat the investigations in the future.

Currently, there are no listed CERCLIS-NFRAP sites located within the 0.5-mile (0.8-km) search distance from the site.

Resource Conservation and Recovery Act / Corrective Action Report

The Corrective Action Report (RCRA COR) database identifies hazardous waste handlers with RCRA action activity. The database shows which nationally defined corrective action core events have occurred for every handler that has currently or previously had corrective action activity.

Currently, there are no sites listed in the RCRA COR database that are within the 1-mile (1.6-km) search distance from the site.

Resource Conservation and Recovery Act information System/Treatment, Storage, and/or Disposal

The Resource Conservation and Recovery Act Information System/ Treatment, Storage and/or Disposal (RCRA TSD) database list identifies those facilities or locations that have notified USEPA of their activities relative to their onsite treatment, storage, and/or

disposal of hazardous wastes. A listed site does not necessarily indicate environmental problems at the site but rather that the site is (or was) engaged in hazardous waste activities; therefore, it may have the potential to cause environmental degradation if hazardous wastes have been mishandled or otherwise released in an uncontrolled manner.

Currently, there are no RCRA TSD sites within the 0.5-mile (0.8-km) search distance from the site.

Resource Conservation and Recovery Act / Quantity Generators

The Resource Conservation and Recovery Act Information System Sites / Quantity Generators (RCRA GEN) is a database of facilities that generate or transport hazardous waste or meet other RCRA requirements. Two categories of RCRA GEN are usually considered. Large Quantity Generators (LQGs) list identifies those facilities or locations that have notified USEPA that they generate (or have generated) at least 2,200 lbs (998 kg) of non-acutely hazardous wastes and/or 2.2 lbs (1 kg) of acutely hazardous waste, monthly. Small Quantity Generators (SQGs) list identifies those facilities or locations that have notified USEPA that they generate (or have generated) less than 2,200 lbs (998 kg) of non-acutely hazardous wastes and/or 2.2 lbs (1 kg) of acutely hazardous waste, monthly. A listed site does not necessarily indicate environmental problems on the site, but rather that the site is (or was) engaged in hazardous waste activities; therefore, it may have the potential to cause environmental degradation if hazardous wastes have been mishandled or otherwise released in an uncontrolled manner.

Currently, there are no RCRA GEN sites within the 0.25-mile (0.4 km) search distance from the site.

Resource Conservation and Recovery Act / No Longer Report

The Resource Conservation and Recovery Act Information Sites / No Longer Report (RCRA NLR) is a database of facilities not currently classified by the USEPA but is still included in the RCRIS database. The reasons for non classification are: (1) Failure to report in a timely matter; (2) No longer in business at the listed address, and/or (3) No longer generating hazardous waste materials in quantities which require reporting.

Currently, there are no listed RCRA NLR sites within the 0.12-mile (0.2 km) search distance from the site.

Emergency Response Notification System

The Emergency Response Notification System (ERNS) is a USEPA national computer database system that is used to store information on the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The ERNS

reporting system contains preliminary information on specific releases, including the spill location, the substance released, and the responsible party. The ERNS report only includes releases from 1988 to the most recent quarterly update.

Currently, there are no ERNS sites within the 0.12-mile (0.2 km) search distance from the site.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) is a database of permitted facilities receiving and discharging effluents to and from a natural source where treatment of the effluent is monitored.

Currently, there are no NPDES sites with the 0.25-mile (0.4 km) search distance from the site.

Facility Index System

The Facility Index System (FINDS) is a database maintained by USEPA/National Technical Information Service that contains both facility information and “pointers” to other sources or more detailed information. The FINDS is the index of identification numbers associated with a property or facility which the USEPA has investigated or has been made aware of in conjunction with various regulatory programs. Each record indicates the USEPA office that may have files on the site or facility. A Facility Registry System (FRS) site has an FRS in the status field.

Currently, there are no FINDS sites within the 0.25-mile (0.4-km) search distance from the site.

Toxic Release Inventory System

The Toxic Release Inventory System (TRIS) is a USEPA database that identifies all facilities that have had or may be prone to toxic material releases.

Currently, there are no TRIS sites within the 0.25-mile (0.4-km) search distance from the site.

Wetlands

The US Fish and Wildlife Service maintains a National Wetlands Inventory (NWI) database of information summarizing characteristics, extent, and status of the Nation’s wetlands and deepwater habitats. This database is available for select areas of the United States.

There are no wetlands within the 0.5-mile (0.8-km) search distance of the site. Designation as a wetland is not an indication of an environmental discharge, violation or concern. Wetlands do not constitute RECs.

Floodplains

The Floodplains is a database maintained by the Federal Emergency Management Agency which summarizes 100 year and 500 year floodplain boundaries for select counties in the United States.

Currently, there are no Floodplains sites within the 0.5-mile (0.8-km) search distance of the site.

Receptors

The sensitive receptors are listed by the 2002 Census Bureau's TIGER (Topologically Integrated Geographic Encoding and Referencing System), from the US Department of Commerce. This database summarizes all schools and hospitals that may house individuals deemed sensitive to environmental discharges due to their fragile immune systems.

Currently, there are no receptors listed within the 0.12-mile (0.2-km) search distance of the site.

Nuclear Permits

The Nuclear Regulatory Commission of the USEPA maintains a database of permitted nuclear facilities (RADINFO). This database provides basic information about facilities that are permitted and regulated for their use and handling of radioactive materials.

Currently, there is no Nuclear Permit on record within the 0.5-mile (0.8-km) search distance from the site.

4.1.2 State of Hawaii ASTM Records

Underground Storage Tanks

The underground Storage Tanks (REG UST/AST) is a database identifying underground and aboveground storage tanks in the State of Hawaii. This database is maintained by the HDOH.

Currently, there are no REG UST/AST sites listed within the 0.25-mile (0.4-km) search distance from the site.

Leaking Underground Storage Tanks

The Leaking Underground Storage Tanks (LUST) is a database identifying underground and above ground storage tanks that have been leaking, and is maintained by the HDOH.

Currently, there are no LUST sites within the 0.5-mile (0.8-km) search distance of the site.

4.1.3 Non-ASTM Supplemental Records

Historic/Landmark

The National Park Service maintains a National Registry of Historic Places database. This database contains the Nation's official list of cultural resources worthy of preservation. Properties listed include districts, sites, buildings, structures, and objects that are significant in American history, architectures, archeology, engineering, and culture.

Currently, there are no Historic/Landmark sites within the 0.5-mile (0.8-km) search distance from the site.

Federal Land Use

The Federal Lands of the United States is a database of lands owned or administered by the Federal Government, including the Bureau of Land Management, the Bureau of Reclamation, the US Department of Agriculture Forest Service, the Department of Defense, the US Fish and Wildlife Service, the Tennessee Valley Authority, and other agencies. Only areas of 640 acres or more are included in this listing. The database provides descriptive information that includes name and type of the Federal land and the administering agency. Indian Lands of the United States is a database of areas administered by the Bureau of Indian Affairs and exceeding 640 acres in size. This database includes Federally-administered lands within a reservation which may or may not be considered part of the reservation. Endangered Species Protection Program is a database that provides a list of the Endangered Species by county and the species status.

This site is considered a Federal Land Use site. Designation as a Federal Land Use site indicates that the Federal government owns and/or operates the land. This designation does not constitute a REC.

Federal Wells

The USGS maintains a database of more than 850,000 records of wells, springs, test holes, tunnels, drains, and excavations in the United States. This database is an inventory of the United States Groundwater Sites.

Currently, there are no Federal Wells sites within the 0.5-mile (0.8-mile) search distance from the site.

Releases (Air/Water)

The USEPA has a list of Air and Surface Water Releases. This list is a subset of the ERNS-National Response System database detailing sites that have impacted only the air or surface water.

Currently, there are no Releases (Air/Water) within the 0.12-mile (0.2-km) search distance from the site.

Hazardous Materials Incident Response System

The Hazardous Materials Incident Response System (HMIRS) is a database of information regarding materials, packaging, and a description of events for tracked incidents.

Currently, there are no HMIRS within the 0.12-mile (0.2-km) search distance from the site.

National Compliance Data Base System

The National Compliance Data Base System (NCDB) is a database of regional compliance and enforcement activity and manages the Pesticides and Toxic Substances compliance and Enforcement program at a national level. The system tracks all compliance monitoring and enforcement activities from the time an inspector conducts an inspection until the time the inspector closes the case or settles the enforcement action. NCDB is the national repository of the 10 regional and Headquarters FIFRA/TSCA Tracking System (FTTS). Data collected in the regional FTTS is transferred to NCDB to support the need for the monitoring national performance of regional programs.

Currently, there are no NCDB sites within the 0.25-mile (0.4-km) search distance from the site.

PADS

The USEPA maintains a database of PCB handlers. This database includes PCB generators, transporters, storers and/or disposers that are required to register with the

USEPA. This database indicates the type of handler and registration number. Also included is the PCB Transformer Registration Database.

Currently, there are no PADS sites within the 0.25-mile (0.4-km) search distance from the site.

Federal Other

Section Seven Tracking System (SSTS) within the USEPA maintains a database of registration and production data for facilities which manufacture pesticides. Aerometric Information Retrieval System (AIRS) is another database of detailed information pertaining to sites which submit air emissions reports. Developed under the Clean Air Act, this database also maintains data on compliance status and enforcement actions.

Currently, there is no Federal Other site within the 0.25-mile (0.4-km) search distance from the site.

Towers

Towers is a database that encompasses three sources of information from the Federal Aviation Administration (FAA) and the Federal Communication Commission (FCC). FAA data includes the Digital Obstacle File which contains obstruction data for man made objects that affect domestic aeronautical charting products. FCC data includes the Wireless Telecommunication Bureau's Universal Licensing System which contains the Antenna Structure Database and the Cellular Tower Database. FCC data also includes the Mass Media Bureau's Consolidated database System which includes engineering data for AM, FM, and Television broadcasting stations.

Currently, there are 2 entries in the Towers database that are within the 0.25-mile (0.4-km) search distance from the site. Designation as a Tower is not an indication of an environmental discharge, violation or concern. These towers do not constitute RECs for the site.

Radon

The USEPA collected radon data from the 1990-1991 national radon project. This project collected data for a variety of zip codes across the United States. The radon data listed here is based on the radon data collected for this site's zip code.

The National Radon Database indicates the presence of radon in the area in concentrations between 1.9 and 1.6 picoCuries/liter (pCi/L). These concentrations are above the screening levels for Zones 1 and 2 and were based on national radon data collected for various zip codes. Although these values exceed the screening levels for Zone 1 and Zone 2, radon information for the Hawaiian Islands indicates that the USEPA has categorized Hawaii as Zone 3 for radon. A Zone 3 classification is for areas with

indoor average radon levels of less than to 2 pCi/L. This is below the USEPA radon recommended action level (RAL) of 4 pCi/L.

4.2 ENVIRONMENTAL AGENCY RECORDS

Findings from the environmental database review did not reveal any RECs or the need for further review of agency records.

The Office of Hazard Evaluation and Emergency Response (HEER) of the HDOH maintains lookup spreadsheets for releases and sites of interest. These spreadsheets were reviewed on May 23, 2007 and the site is currently not listed as a site of interest. There are two listed releases that have occurred on MCBH Kaneohe Bay. The first release occurred on March 15, 2000 and consisted of a 100-gallon spill of jet fuel that was contained in the built-in secondary containment of a tanker truck. The spill was pumped into a bowser and later processed through an oil-water separator. The spill occurred at the fueling pits and not at the Ulupau Central/South Family Housing Area. No further action was indicated for this release event. The second release occurred on February 20, 2006 and consisted of a million-gallon raw sewage discharge from the base's water reclamation facility. The HEER referred this release event to the Clean Water Branch of the HDOH. These releases did not affect the Ulupau Central/South Family Housing Area and do not constitute RECs to the site.

4.3 NAVY RECORDS AND DOCUMENTS

4.3.1 2007 Environmental Condition of Property (ECP) Report

The Environmental Condition of Property (ECP) Report (Naval Facilities Engineering Command Pacific, May 2007) identified floor tiles and mastic, and roof shingles and roof felt as interior ACMs. Other suspect ACMs reported include roofing materials, asbestos concrete pipes, transite in housing walls, sink undercoating, mastic for rubber baseboards, drywall joint compound, ceiling acoustical tiling and asbestos coated pipes in concrete foundations. ACMs constitute RECs to the site.

The ECP reports the presence of LBP on wood closet shelves, door casings, exterior wood doors, exterior wood door casings, exterior wood upper walls, and wood carport ceilings. LBP constitutes a REC to the site.

Due to the historic use of chlordane as a termiticide in homes, chlordane may exist in the soil near the foundation and under the building slabs. Prior to demolition activities, surface and near-surface soil sampling for chlordane and other pesticides, including DDT, dieldrin, and heptachlor, is recommended. Chlordane and other pesticides constitute RECs to the site.

The ECP reports that older, interior, fluorescent light fixtures have the potential to contain polychlorinated biphenyl (PCB)-containing ballasts. PCB-containing ballasts constitute RECs to the site.

According to the ECP, a former UST (UST 82) was located approximately 1,000 ft southwest of the site. No further action is required at this site; therefore, this former UST site does not constitute a REC to the site.

The ECP also identifies the Ulupau Sanitary Landfill as being located to the east of the site across Daly Road and concludes that the landfill is not likely to impact the site. Based on the ECP, the landfill does not constitute a REC to the site.

4.3.2 2006 Environmental Baseline Survey

The 2006 Environmental Baseline Survey reports that the application of waste oil as a dust suppressant along roadways was a common practice at military installations. Since no documentation can be found to support that this practice occurred at the site, this does not constitute a REC to the sites.

According to the Environmental Baseline Survey, human remains have been encountered during previous construction at the adjacent Nani Ulupau neighborhood. This does not constitute a REC to the site.

4.3.3 Integrated Natural Resources Management Plan

The MCBH Integrated Natural Resources Management Plan and Environmental Assessment (MCBH 2001) served as a reference for endangered species data in the Kaneohe Bay area. The four resident native waterbird species observed primarily at Kaneohe Bay wetlands that are federally listed endangered species are of special protection concern [e.g., Hawaiian stilt (*ae'o*, *Himantopus mexicanus knudseni*), Hawaiian gallinule (*'alae 'ula*, *Gallinula chloropus sandvicensis*); Hawaiian Coot (*'alae ke'oke'o*, *Fulica americana alai*), and Hawaiian duck (*koloa moali*, *Anas wyvilliana*)]. The growing colony of wedge-tailed shearwaters (*Puffinus pacificus chlororhynchus*) nesting in the eastern sand dune of the pond shoreline is also of special protection concern. There are no naturally-occurring plant species currently found at Kaneohe Bay that are identified as listed endangered species.

In addition to the diverse marine organisms of concern hosted in marine waters of Mokapu's 500-yard buffer zone (e.g., coral colonies, sponges, bryozoans, sabellid worms, tunicates, and 200 fish species), there are several species of marine animals in the waters off-shore of MCBH Kaneohe Bay that have been declared threatened or endangered by the federal government and are of special protection concern. These include threatened green sea turtles (*Chelonia mydas*), the endangered hawksbill turtle (*Eretmochelys imbricata*), the endangered Hawaiian monk seal (*Monachus schauinslandi*), and the endangered humpback whale (*Megaptera novaeangliae*). Of these species, there have been several documented "false nest" attempts by sea turtles along Mokapu shoreline beaches, but these turtles regularly swim and feed in Mokapu's nearshore waters. Hawaiian monk seals infrequently haul

out to rest along Mokapu shoreline beaches on the northwest and northeast coastline either side of Pyramid Rock.

4.3.4 Asbestos Management Plan

An asbestos assessment for the site was completed in April 1997 by the Department of the Navy Public Works Center. The assessment identified presence of ACM in some units in floor tile and mastic, and roof shingles and felt. Other suspect ACMs reported in the ECP include roofing materials, asbestos concrete pipes, transite in housing walls, sink undercoating, mastic for rubber baseboards, drywall joint compound, ceiling acoustical tiling and asbestos coated pipes in concrete foundations.

4.3.5 Lead-Based Paint Management Plan

Lead assessments for the site were completed in 1997, 2006 and 2007. The assessments investigated presence and levels for lead in paint, interior dust, and exterior soil (Navy Public Works Center – MCBH Kaneohe Bay, 1997 and Naval Facilities Engineering Command Pacific, 2006, 2007). Results of the lead assessments for the subject property conducted in 1997 and 2006 indicate that none of the building components tested was found to contain LBP except for the following: bedroom closet shelf, bedroom door frame, exterior wall, hallway door frame, kitchen door frame, and laundry ceiling. In the 2007 assessments, although none of the component types met the criteria for community-wide LBP surfaces, LBP was present in six component types (wood shelf closet, door casing, exterior wood door, exterior wood door casing, exterior wood upper hall, and carport wood ceiling. Based on HUD's Multifamily Decision Tree, LBP is not present community-wide. Lead levels in dust samples did not exceed the United States Department of Housing and Urban Development (HUD)/USEPA Guidance action levels of 100 $\mu\text{g}/\text{ft}^2$ for floors, 500 $\mu\text{g}/\text{ft}^2$ for window sills, and 800 $\mu\text{g}/\text{ft}^2$ for window wells. Soil samples at the subject property were not found to exceed current HUD/USEPA Guidance action level of 400 ppm.

4.3.6 Radon Testing Report for U.S. Marine Corps Base Hawaii Housing

A radon survey of MCBH housing was conducted from December 2004 to May 2005. Thirty three randomly selected Ulupau housing units were tested for radon in accordance with the Navy Radon Assessment and Mitigation Program (NAVRAMP) screening (Phase 1). Detailed statistical analysis of the screening data by geological providence found no radon potential in the Ulupau family housing area. In accordance with NAVRAMP, no further testing is required for the remaining lifetime of the housing units at the Ulupau family housing area.

4.4 PHYSICAL SETTINGS SOURCE(S)

4.4.1 USGS Topographic Map

Exhibit 3 presents the location of the site on a USGS topographic map.

4.4.2 Geological, Hydrogeological, and Meteorological Review

Geology

The island of O'ahu originated from the remnants of two shield volcano mountain ranges, with the older Waianae Mountain Range on the west and the younger Koolau Range on the east. MCBH Kaneohe Bay is located on the Mokapu peninsula, adjacent to Kaneohe Bay and downgradient from the Koolau mountain range. Three volcanic vents are present on the peninsula from the Honolulu Volcanic Series. These include the Ulupau cone (tuff cone) to the east, Puu Hawaiiioa (cinder cone and lava flow) in the center of the peninsula and Pyramid Rock (lava flow) at the northern tip of the peninsula (Macdonald, 1983). Except for these features, the topography in the area rises from sea level to some 100 feet above mean sea level. Geologic formations in the area include coral reef deposits, sedimentary deposits and underlying basalt flows as well as tuff and cinder cones.

Hydrogeology

The depth to groundwater here is anticipated at elevations close to mean sea level. On the Mokapu peninsula, two aquifer types are present: upper basal (fresh water in contact with sea water) unconfined aquifers in sedimentary deposits and a lower basal confined aquifers in dike deposits (Mink and Lau, 1990).

Meteorology

The site is located within the Kaneohe area of O'ahu. Meteorological studies and investigations from a weather station located at Kaneohe Mauka have indicated that the average high of 83.2 degrees Fahrenheit (°F) occurs during the summer months and a low of 65.3°F occurs in the winter months. The average annual maximum temperature is 79.8°F. Rainfall occurs year-round, providing an average annual rainfall of 76.0 inches (1.93 m) of rain (WRCC, 2006).

4.5 HISTORICAL USE INFORMATION

4.5.1 Aerial Photographs

Copies of aerial photographs of the site and surrounding areas were obtained for the years 1950, 1969, and 1999 from TIS. These photographs are presented in Appendix B. The following historical information was identified on the aerial photographs:

1950: The site is undeveloped. All adjacent areas are undeveloped.

1969: Compared to the 1950 aerial photograph, no additional development of the site is visible. All along the southwestern, western and northwestern boundaries of the site,

military family housing are visible. Directly north, east and south of the site, the adjacent areas are still undeveloped.

1999: The site is developed showing the Ulupau housing area. Adjacent areas are unchanged, compared to the 1969 photograph.

4.5.2 Historic Topographic Maps

Copies of historic topographic maps of the site and surrounding areas were obtained for the years 1959, 1968, 1983 and 1998 from TIS. These maps are presented in Appendix C. The site development as recorded on the historic topographic maps is closely aligned with the development presented in the historical aerial photographs. The development of the site as well as the development of the areas west of the site, as noted in the 1969 aerial photograph description, is recorded on the 1959 topographic map.

4.5.3 Fire Insurance Maps

Sanborn® fire insurance maps were not available for the site.

4.5.4 Recorded Land Title Records

The site is currently owned by the Federal government and managed by the Department of Defense. Declarations of taking by the United States government for military use were made on July 2, 1918 and December 3, 1936.

4.5.5 Building Department Records

The site is currently owned by the Federal government and managed by the Department of Defense. Parsons coordinated with the Navy during the site reconnaissance and records search. Information regarding date of construction and subsequent modifications to structures was reviewed and incorporated into this assessment from information provided by the Navy and available on the Internet, and from other documents provided by the Design contractor.

4.5.6 Zoning/Land Use Records

The zoning designation for the site is F-1, Military and Federal.

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5.0 INFORMATION FROM SITE RECONNAISSANCE AND INTERVIEWS

Parsons conducted reconnaissance of the site on May 29, 2007. The site consists of the Ulupau Central/South Family Housing Area, which is occupied by Marine Corps personnel and dependents. One two-story housing unit in a four-plex was available for inspection. Parsons also conducted reconnaissance of the Site on March 2, 2006 in connection with the Phase I ESA prepared for the Ulupau Marine Corps Family Housing Area. The site was observed as part of identifying adjacent land uses relative to the Ulupau Marine Corps Family Housing Area.

5.1 HAZARDOUS SUBSTANCES IN CONNECTION WITH IDENTIFIED USES

During the site reconnaissance, hazardous substances were not observed at the site

5.2 HAZARDOUS SUBSTANCE CONTAINERS AND UNIDENTIFIED SUBSTANCE CONTAINERS

During the site reconnaissance in March 2006 and May 2007, hazardous substance or unidentified substance containers were not observed at the site.

5.3 STORAGE TANKS

During the site reconnaissance in March 2006 and May 2007, there were no storage tanks observed at the site.

5.4 INDICATIONS OF PCBS

During the site reconnaissance in March 2006 and May 2007, pad-mounted transformers and fluorescent lighting, which have the potential to contain PCBs, were observed in various locations of the property. PCB-free labels were observed on the transformers during the site reconnaissance, indicating that the transformer oil is PCB-free.

Older exterior fluorescent light fixtures were observed in housing units and carports, the ballasts of which have the potential to contain PCBs.

5.5 INDICATIONS OF ASBESTOS

During the site reconnaissance in March 2006 and May 2007, suspect ACMs were noted in the following building materials: roof tar, sink undercoating, drywall joint compound, and in the mastic for floor tiles and rubber baseboards.

5.6 INDICATIONS OF SOLID WASTE DISPOSAL

During the site reconnaissance in March 2006 and May 2007, minimal domestic trash (litter) was observed.

5.7 PHYSICAL SETTING ANALYSIS, IF MIGRATING HAZARDOUS SUBSTANCES ARE AN ISSUE

Section 4.1 summarizes potential concerns regarding nearby sites that may have an impact on the site and Section 4.4 summarizes the physical setting.

5.8 WETLANDS AND FLOODPLAINS

During the site reconnaissance in March 2006 and May 2007, no wetlands or floodplains were observed.

5.9 LEAD

During the site reconnaissance in March 2006 and May 2007, exterior and interior paint conditions were observed to be in good to fair (i.e. chipping) condition; and interior wood components (e.g. door and window casings, shelves, beams, closets and associated shelving) were noted as original features potentially containing LBP.

5.10 ENDANGERED SPECIES AND SENSITIVE ENVIRONMENTS

5.10.1 Endangered Species

Endangered species were not observed during the site reconnaissance in March 2006 and May 2007.

5.10.2 Sensitive Environments

Sensitive environments were not observed during the site reconnaissance in March 2006 and May 2007.

5.11 INTERVIEWS

5.11.1 Military Organizations

In May, July, and August 2007, representatives of Marine Corps Base Hawaii and Naval Facilities Engineering Command, Pacific and Region Hawaii, were contacted. The following lists these individuals and their titles. Information provided by these individuals has been incorporated throughout this report as appropriate.

(b) (6)	MCBH Kaneohe Bay Housing Manager
(b) (6)	MCBH Kaneohe Bay Housing Inspector
(b) (6)	MCBH Installation Restoration Program Manager
(b) (6)	Environmental Engineer, NAVFAC Pacific, Environmental Compliance Program
(b) (6)	Environmental Engineer, NAVFAC Pacific,

Hazardous Waste Program

(b) (6)

Environmental Engineer, NAVFAC Pacific,
Air Quality and National Environmental Policy Act

(b) (6)

Certified Industrial Hygienist, NAVFAC Pacific,
Asbestos/Lead-Based Paint

(b) (6)

Environmental Engineer, NAVFAC Region Hawaii,
Installation Restoration Program

5.11.2 Hawaii Department of Health

The HDOH was contacted in August 2007 regarding ongoing environmental investigations and compliance actions at the family housing areas at MCBH Kaneohe Bay. The inquiry was referred by (b) (6), Remedial Project Manager at the HEER, to (b) (6), the Installation Restoration Program Manager at MCBH. In addition, (b) (6) of the HEER was also contacted regarding the HDOH's database of Activity and Use Limitations (AULs). Information received from (b) (6) on 7 September 2007 indicated that of the military family housing areas at MCBH Kaneohe Bay, only the Waikulu neighborhoods of Rainbow Court and NCO Row are currently required to manage soils in accordance with the Pesticide Soils Management Plan, dated February 2007. The HDOH considers the Pesticide Soils Management Plan as constituting Land Use Control.

5.12 OTHER CONDITIONS OF CONCERN

No indications of termite infestation were observed during the site reconnaissance. Historically chlordane containing pesticides have been used in the management of termite infestation, typically applied during construction of the homes under slabs and around the foundations. Chlordane is a persistent pesticide with a half life of approximately 4 years, and can persist in soil over 20 years. Due to historic use of chlordane in homes, chlordane may exist in the soil near the foundation and under the building slabs.

Smoke detectors in older units have the potential to contain a radioactive source. Prior to demolition, the concentration of radioactive materials in older smoke detectors should be checked to ensure that they are disposed of properly. Additionally, light switches and lamps in older units have the potential to contain mercury, and should be disposed of properly. The Hazardous Materials Management Plan includes information regarding the proper disposal of hazardous materials and wastes.

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6.0 FINDINGS

6.1 FINDINGS SUMMARY

Based on the definition of a REC in the ASTM Standard Practice E 1527-05, the following RECs have been identified for the site:

- During the site reconnaissance, potential for ACM was noted in the following building materials: roof tar, sink undercoating, drywall joint compound, and in the mastic for tile and rubber baseboards. An asbestos assessment for the subject property was completed in April 1997 by the Department of the Navy Public Works Center. The assessment identified presence of ACM in some units in floor tile and mastic, and roof shingles and felt. It is recommended that the presence of ACM be disclosed to prospective tenants. It is also recommended that any renovation or demolition activities be conducted in accordance with the Asbestos Management Plan.
- During the site reconnaissance, LBP was suspected on the following building components: interior wood components (e.g. door and window casings, shelves, beams, closets and associated shelving). Lead assessments conducted in 1997, 2006 and 2007 (Navy Public Works Center-MCB Kaneohe, 1997 and Naval Facilities Engineering Command Pacific Division, 2006, 2007)) indicated that building components tested were found to contain LBP. However, based on HUD's Multifamily Decision Tree, LBP is not present community-wide. Concentrations of lead in dust and soil were below the current HUD action levels. It is recommended that the presence of LBP be disclosed to prospective tenants. It is also recommended that any renovation or demolition activities be conducted in accordance with the Lead-Based Paint Management Plan. It is recommended that LBP waste be tested in accordance with TCLP prior to disposal to determine disposal options.
- During the site reconnaissance, fluorescent lighting that may contain polychlorinated biphenyl (PCB)-containing ballasts was observed in various locations of the site. It is recommended that potential PCB-containing ballasts be properly managed in accordance with the Hazardous Materials Management Plan during renovation or demolition activities.
- Due to the historic use of chlordane as a termiticide in homes, chlordane may exist in the soil near the foundation and under the building slabs. Surface and near-surface soil sampling for chlordane and other pesticides, including DDT, dieldrin, and heptachlor is recommended.

- Smoke detectors in older units have the potential to contain a radioactive source. Prior to renovation or demolition, smoke detectors should be inspected for the radioactive sources, and handled and disposed of in accordance with the Hazardous Materials Management Plan.
- Light switches and lamps in older units have the potential to contain mercury. During demolition or renovation, these switches and lamps should be removed and disposed of properly in accordance with the Hazardous Materials Management Plan.

7.0 OPINION

Based on the findings of our assessment, Parsons provides the following opinions on the observed conditions:

The following RECs have been identified for the site:

- **ACM** - An asbestos assessment for the subject property was completed in April 1997 by the Department of the Navy Public Works Center. The assessment identified presence of ACM in some units in floor tile and mastic, and roof shingles and felt. It is the opinion of the environmental professional (EP) that although the ACM is contained and does not present a risk to tenants, the presence of ACM should be disclosed to prospective tenants and any renovation or demolition activities should be conducted in accordance with the Asbestos Management Plan.
- **LBP** - Lead assessments conducted in 1997, 2006 and 2007 (Navy Public Works Center-MCB Kaneohe, 1997 and Naval Facilities Engineering Command Pacific Division, 2006, 2007) indicated that building components tested were found to contain LBP. However, based on HUD's Multifamily Decision Tree, LBP is not present community-wide. Concentrations of lead in dust and soil were below the current HUD action levels. It is the opinion of the EP that although the LBP does not present a risk to tenants, the presence of LBP should be disclosed to prospective tenants. It is also recommended that any renovation or demolition activities be conducted in accordance with the Lead-Based Paint Management Plan and that LBP waste be tested in accordance with TCLP prior to disposal to determine disposal requirements.
- **PCB-containing ballasts** - It is the opinion of the EP that older fixtures observed at the site may contain PCB-containing ballasts. Although they pose no risk to residents, it is recommended that potential PCB-containing ballasts be properly managed in accordance with the Hazardous Materials Management Plan during renovation or demolition activities.
- **Pesticides** - Due to historic use of chlordane as a termiticide at military properties, it is the opinion of the EP that chlordane may have been used at the site for pest control. As a result, surface and near-surface soil sampling for chlordane and other pesticides including DDT, dieldrin, and heptachlor is recommended.
- **Radioactive source** - It is the opinion of the EP that smoke detectors in older units have the potential to contain a radioactive source. Although the smoke detectors pose no risk to residents, they should be inspected, handled and disposed of in accordance with the Hazardous Materials Management Plan.

- Mercury - It is the opinion of the EP that switches in older units have the potential to contain mercury. Although mercury-containing switches pose no risk to residents, they should be removed and disposed of properly in accordance with the Hazardous Materials Management Plan.

The 2006 Environmental Baseline Survey reports that the application of waste oil as a dust suppressant along roadways was a common practice at military installations. Since no documentation can be found to support that this practice occurred at the site, it is the opinion of the EP that this does not constitute a REC to the sites.

The 2007 Environmental Condition of Property report identified a former UST (UST 82) located approximately 1,000 ft southwest of the site and the Ulupau Sanitary Landfill located east of the site across Daly Road. No further action is required at the former UST site; therefore, the former UST site does not constitute a REC to the site. The ECP report also concludes that the landfill is not likely to impact the site, therefore, based on the ECP, the landfill does not constitute a REC to the site.

8.0 CONCLUSIONS

Parsons has conducted this Phase I Environmental Site Assessment in accordance with the American Society for Testing and Materials Standard Practice E 1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process* of the Ulupau Central/South Family Housing Area located at MCBH Kaneohe Bay. This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property except for the following:

8.1 GENERAL CONCLUSIONS

Per the findings above, the following RECs were identified for the site: (1) ACM, (2) lead, (3) PCB-containing ballasts, (4) chlordane and other pesticides including DDT, dieldrin, and heptachlor in soils (5) smoke detectors, and (6) mercury switches in housing units and associated structures.

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9.0 DEVIATIONS AND DATA GAPS

9.1 DEVIATIONS

There were no deviations in the performance of this Phase 1 environmental site assessment.

9.2 DATA GAPS

There were no data gaps identified for this site.

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10.0 REFERENCES

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Marine Corp Base Hawaii Integrated Natural Resources Management Plan and Environmental Assessment (MCBH INRMP/EA), Marine Corps Base Hawaii, Prepared by: Diane C. Drigot Environmental Department, Marine Corps Base Hawaii, November 2001.

Oak Ridge National Laboratory. Radon Testing Report for U.S. Marine Corps Base Hawaii Housing. Prepared for Naval Facilities Engineering Command Pacific, Environmental Compliance Division. January 17, 2007.

Personal communication between (b) (6) of the Hawaii Department of Health and (b) (6) of Parsons. August 6, 2007.

Personal communication between (b) (6) of MCBH and (b) (6) of Parsons. August 13, 2007.

**PHASE I ENVIRONMENTAL SITE ASSESSMENT
ULUPAU CENTRAL/SOUTH FAMILY HOUSING AREA
MARINE CORPS BASE HAWAII, KANEOHE BAY**

Personal communication between (b) (6), Ohana Military Communities LLC / (b) (6), Parsons and (b) (6), MCBH Kaneohe Bay Housing Office, July 13, 2007.

Personal communication between (b) (6), Ohana Military Communities LLC / (b) (6), Parsons and (b) (6), NAVFAC Pacific / (b) (6), NAVFAC Region Hawaii, May 30, 2007.

Personal communication between (b) (6), Hawaii Department of Health and (b) (6) Parsons, August 24, 2007.

Ohana Repair Cost and Inventory Database. Ohana Military Communities, LLC, Hawaii. August 2006.

Lead Management Plan Ulupau Housing. Navy Public Works Center- MCB Kaneohe. April 1997.

Final Lead Survey Report / Lead Risk Assessment Report, Ulupau Housing Area, Marine Corps Base Hawaii, MCBH Kaneohe Bay, Hawaii for Naval Facilities Engineering Command Pacific Division. June 2006.

PreFinal Lead Survey Report / Lead Risk Assessment Report, Ulupau Housing Area, Marine Corps Base Hawaii, MCBH Kaneohe Bay, Hawaii for Naval Facilities Engineering Command Pacific Division. July 2007.

TIS. Environmental FirstSearch™ Report. February 12, 2006.

TIS. Environmental FirstSearch™ Report. May 24, 2007.

TIS. Historical Aerial Photograph Report February 21, 2006.

TIS. Historical Topographic Map Report. March 6, 2006.

Volcanoes in the Sea, The Geology of Hawaii, Second Ed., Macdonald et. al., 1893.

Western Regional Climate Center.

11.0 DECLARATION BY ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in Section 312.10 of Title 40, Code of Federal Regulations (CFR), Part 312 dated 1 November 2005.

We have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.

Signature:

Date:

(b) (6)

(b) (6)

October 1, 2007

(b) (6)

(b) (6)

October 1, 2007

(b) (6)

(b) (6)

October 1, 2007

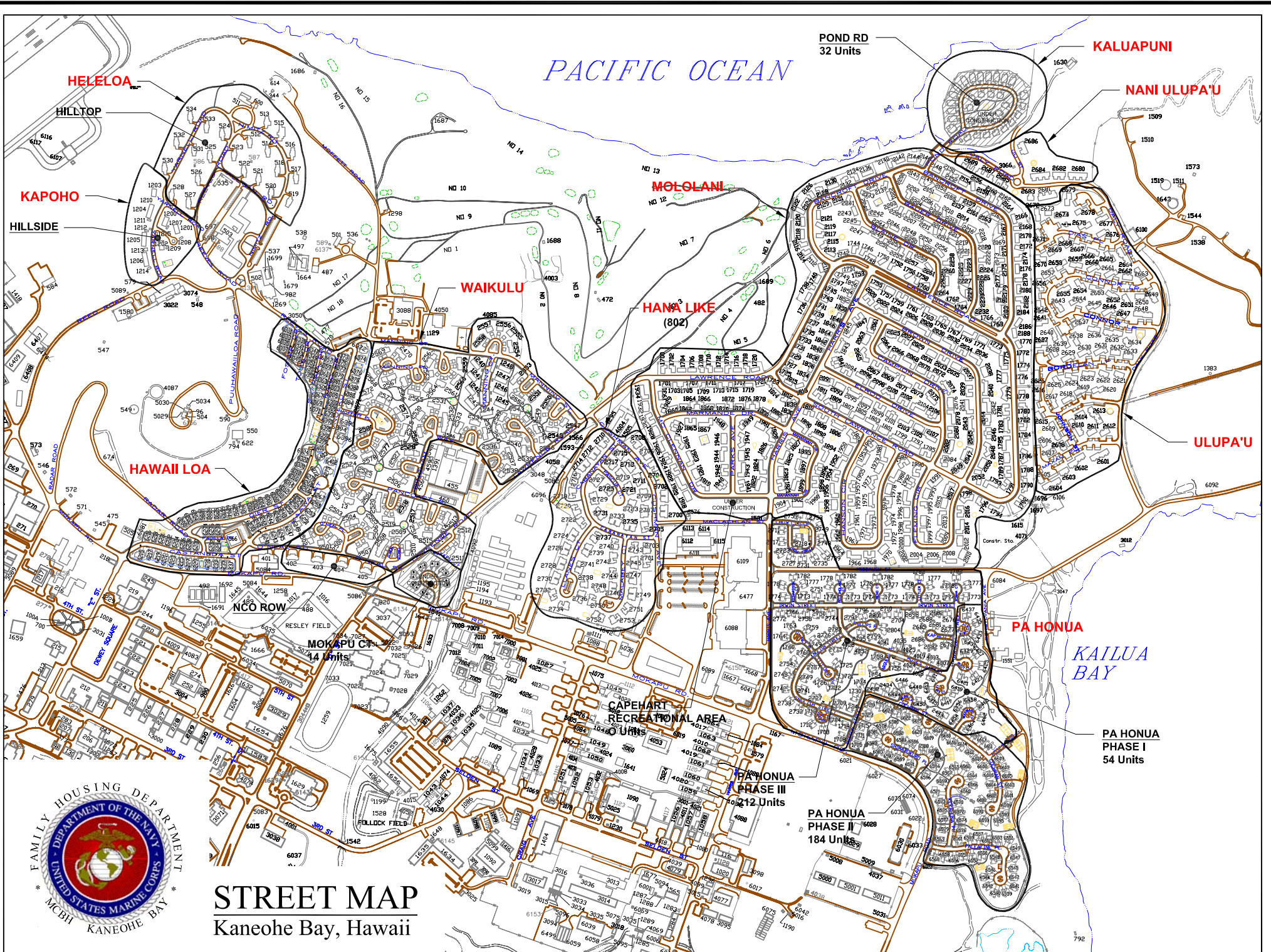
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12.0 QUALIFICATION(S) OF ENVIRONMENTAL PROFESSIONAL(S)

Name	Degree	Years of Experience	Project Responsibilities
(b) (6), P.E.	M.S., Chemical Engineering	29	Site reconnaissance, data review and report preparation
(b) (6) P.E.	M.S., Chemical Engineering	28	Site reconnaissance, data review and report preparation
(b) (6)	B.A., Environmental Studies	6	Site reconnaissance, data review and report preparation
	B.A., Anthropology		

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EXHIBIT 1
SITE MAP



STREET MAP

Kaneohe Bay, Hawaii

POND RD
32 Units

KALUAPUNI

NANI ULUPA'U

PACIFIC OCEAN

HELELOA

HILLTOP

KAPOHO

HILLSIDE

MOLOLANI

WAIKULU

HANA LIKE
(802)

HAWAII LOA

ULUPA'U

NCO ROW

MOKAPU CT
14 Units

CAPEHART
RECREATIONAL AREA

PA HONUA
PHASE III
212 Units

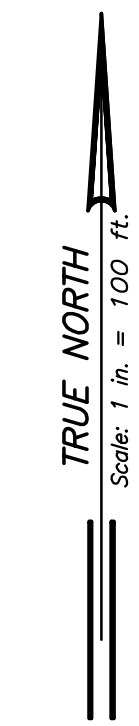
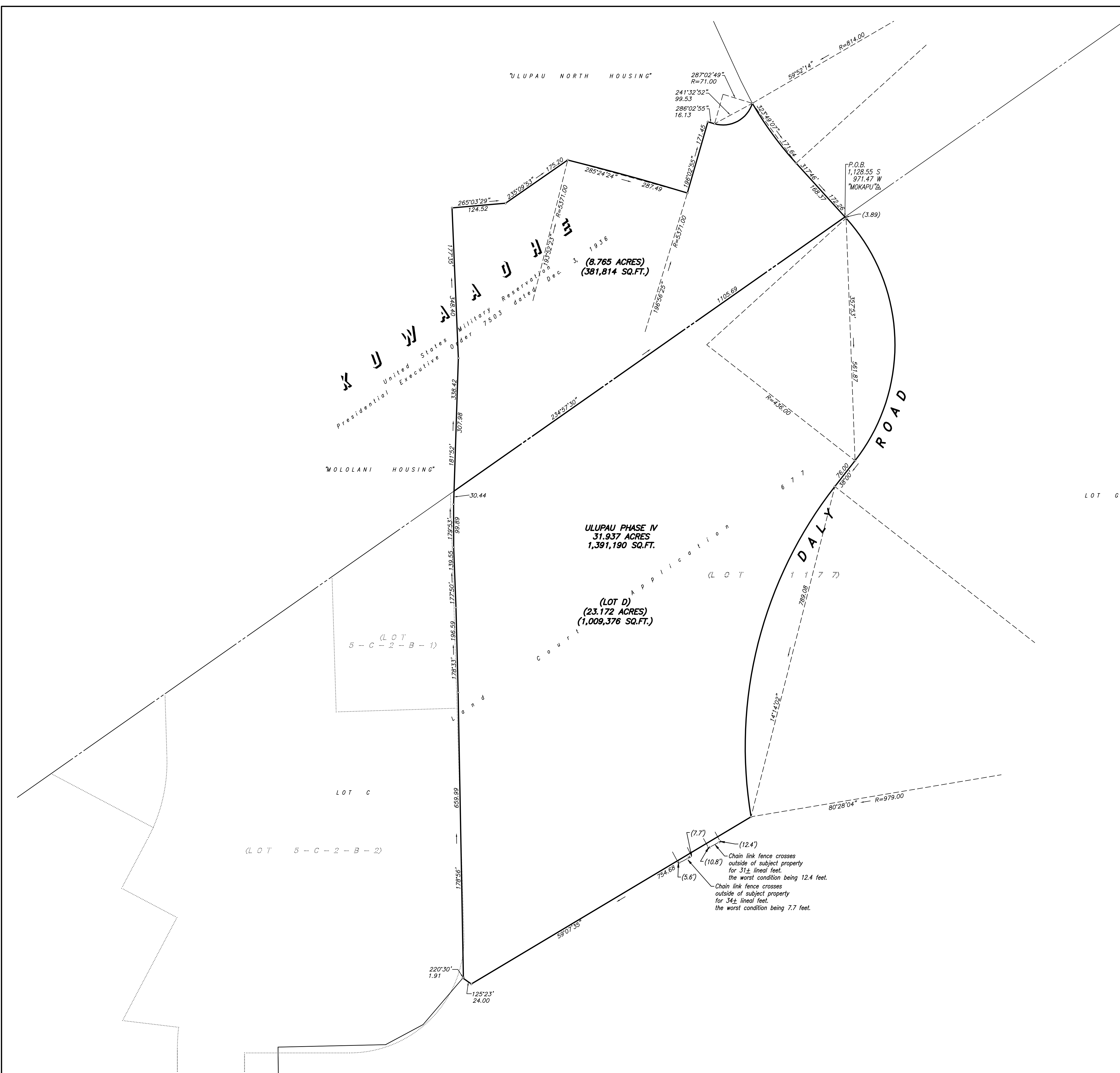
PA HONUA
PHASE II
184 Units

PA HONUA

KAILUA
BAY

PA HONUA
PHASE I
54 Units

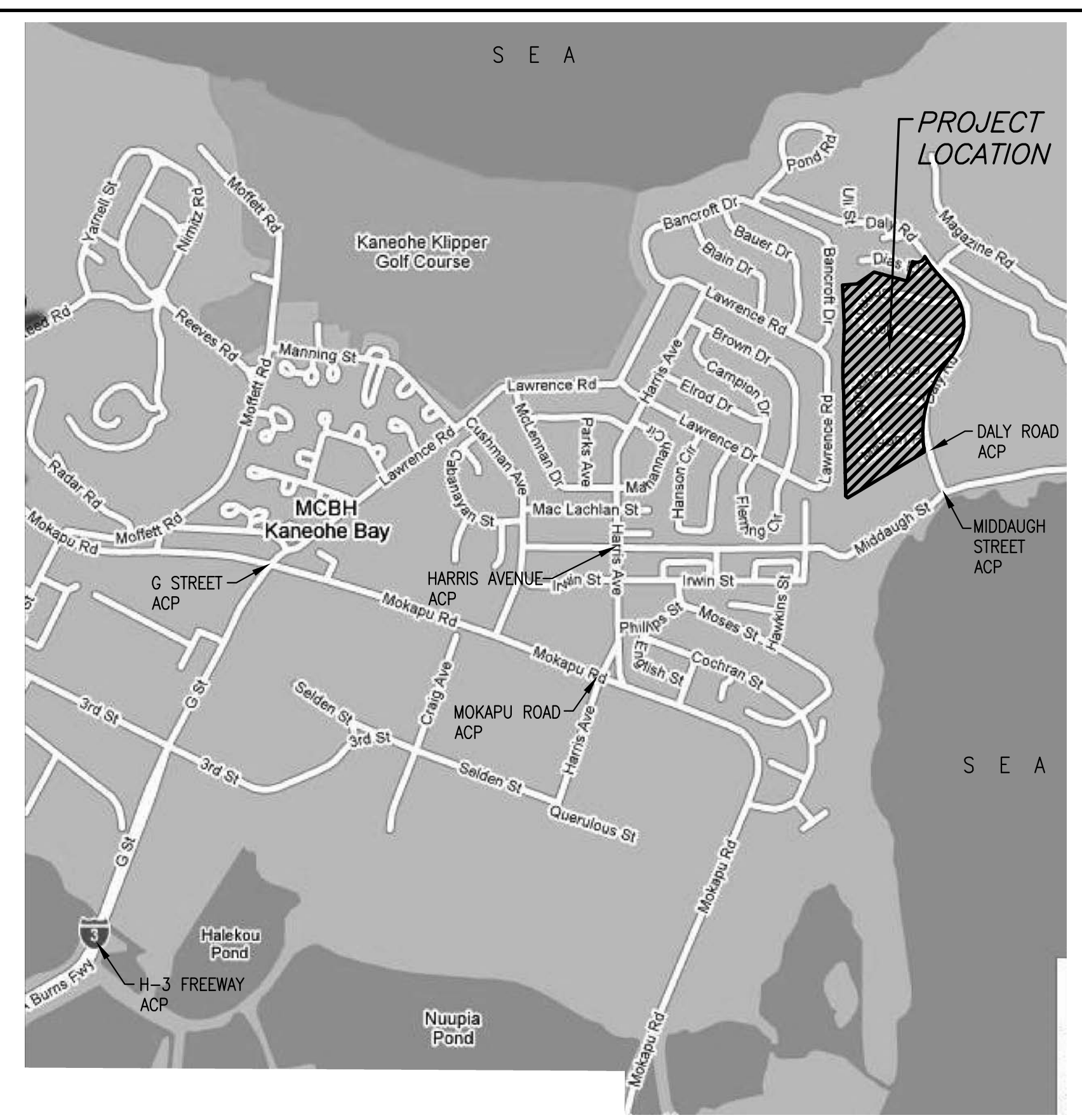
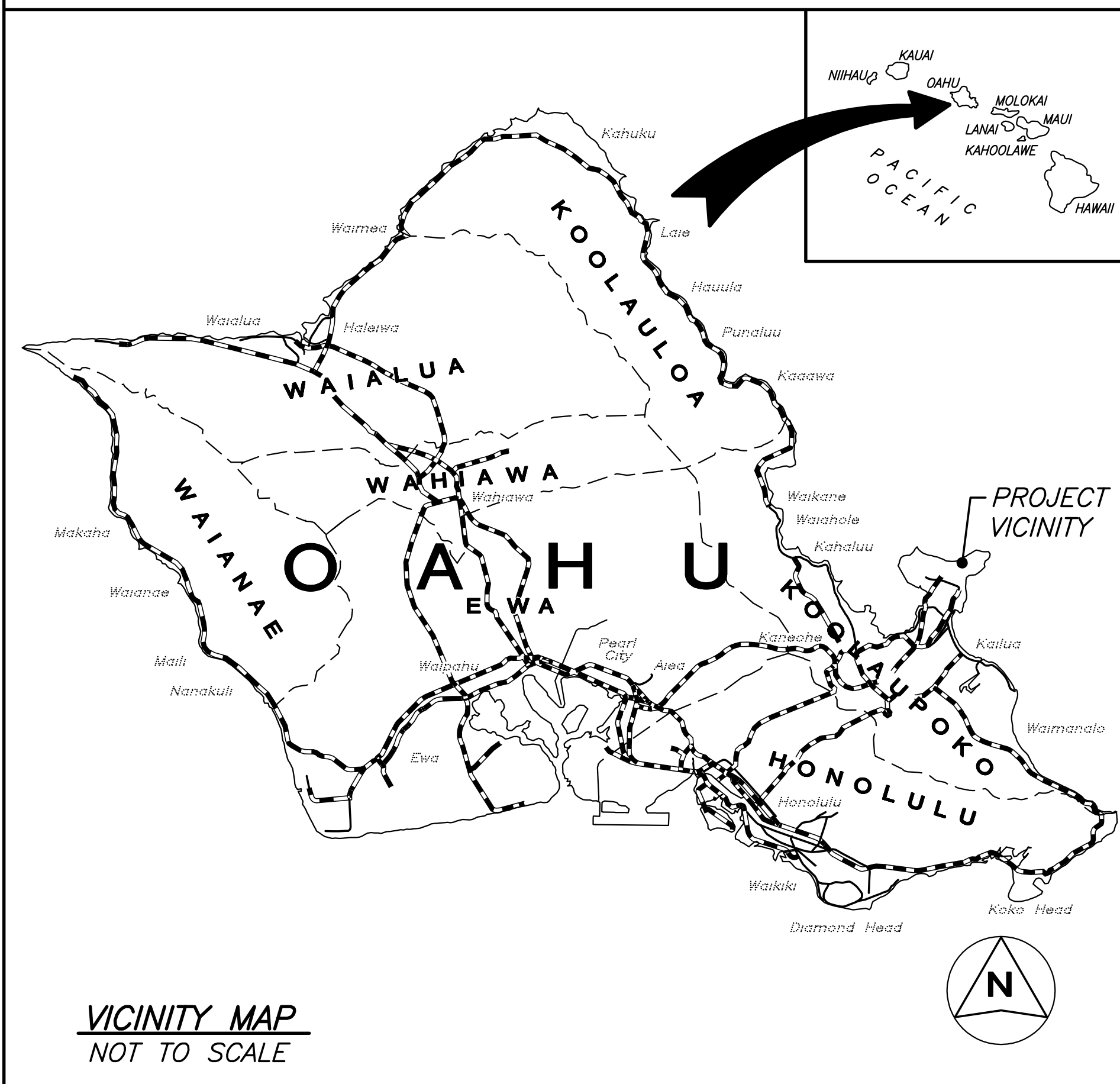
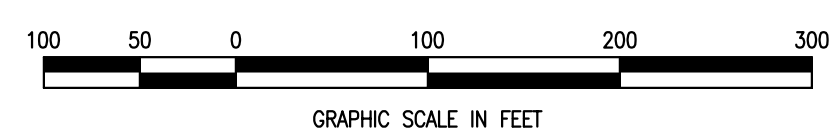
EXHIBIT 2
SITE SURVEY MAP



MODIFIED ALTA/ACSM LAND TITLE SURVEY

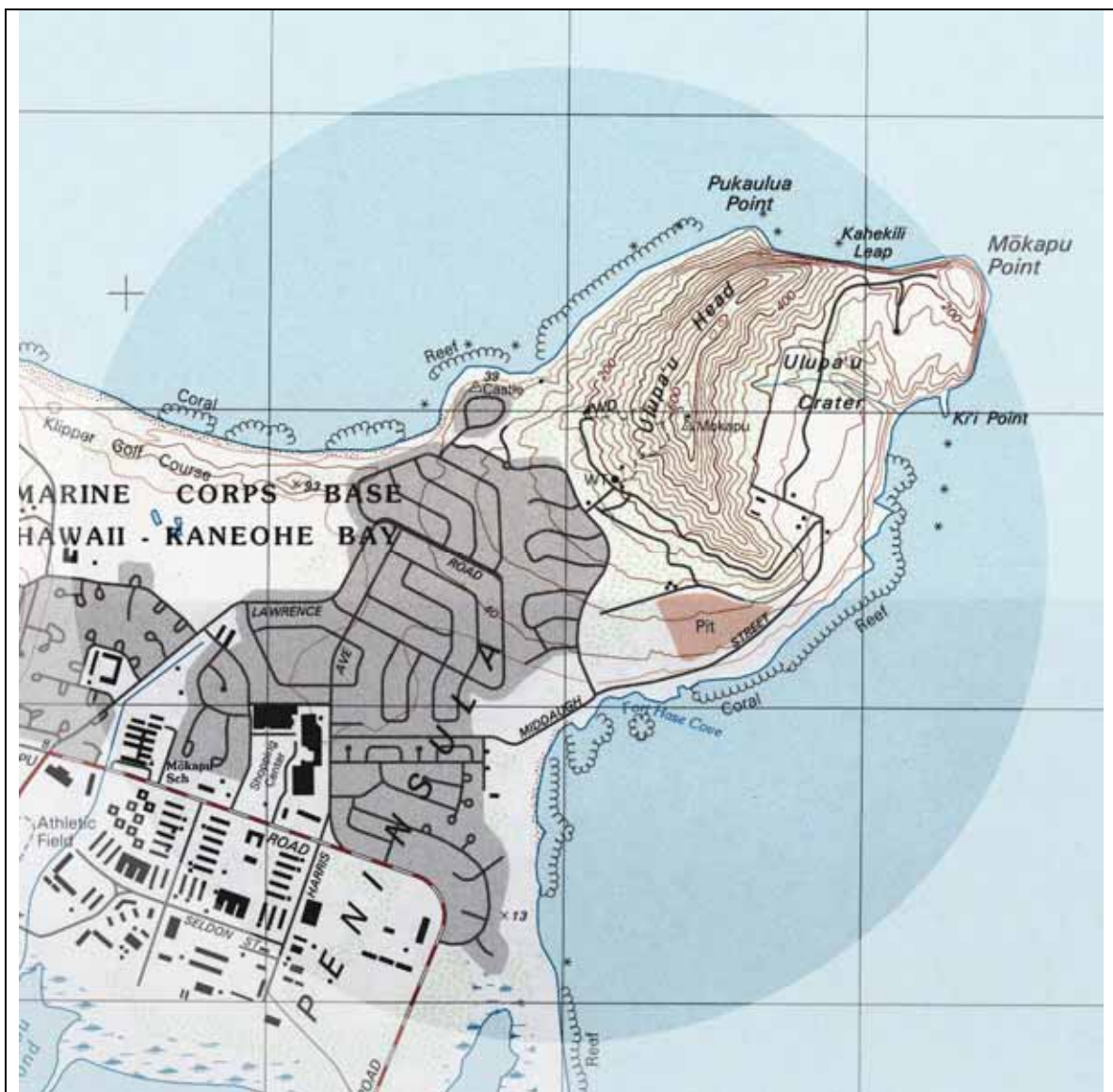
"ULUPAU PHASE IV HOUSING"
BEING A PORTION OF THE LANDS CONVEYED BY
PRESIDENTIAL EXECUTIVE ORDER NO. 2900, DATED JULY 2, 1918,
AMENDED BY PRESIDENTIAL EXECUTIVE ORDER NO. 4535,
DATED OCTOBER 29, 1926, AMENDED AND CORRECTED BY
PRESIDENTIAL EXECUTIVE ORDER NO. 7503, DATED DECEMBER 3, 1936
AND LOT D, AS SHOWN ON PENDING MAP
OF LAND COURT APPLICATION 677

KANELOHE, KOOLAUPOKO, OAHU, HAWAII
TAX MAP KEY: (1ST DIV.) 4-4-09: portion 03



LEGEND:	
ACP	Access Control Point
▲	Government Survey Triangulation Station
P.O.B.	Point of Beginning
Sq.Ft.	Square Feet

EXHIBIT 3
SITE TOPOGRAPHICAL MAP



Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1998 (modified)



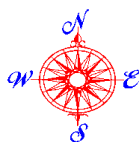
NORTH



1 inch = 1667 feet
SCALE

1998 Historical Topographic Map
Ulupau Family Housing Area

EXHIBIT 4
ENVIRONMENTAL DATABASE SITES WITHIN ASTM SEARCH
DISTANCE

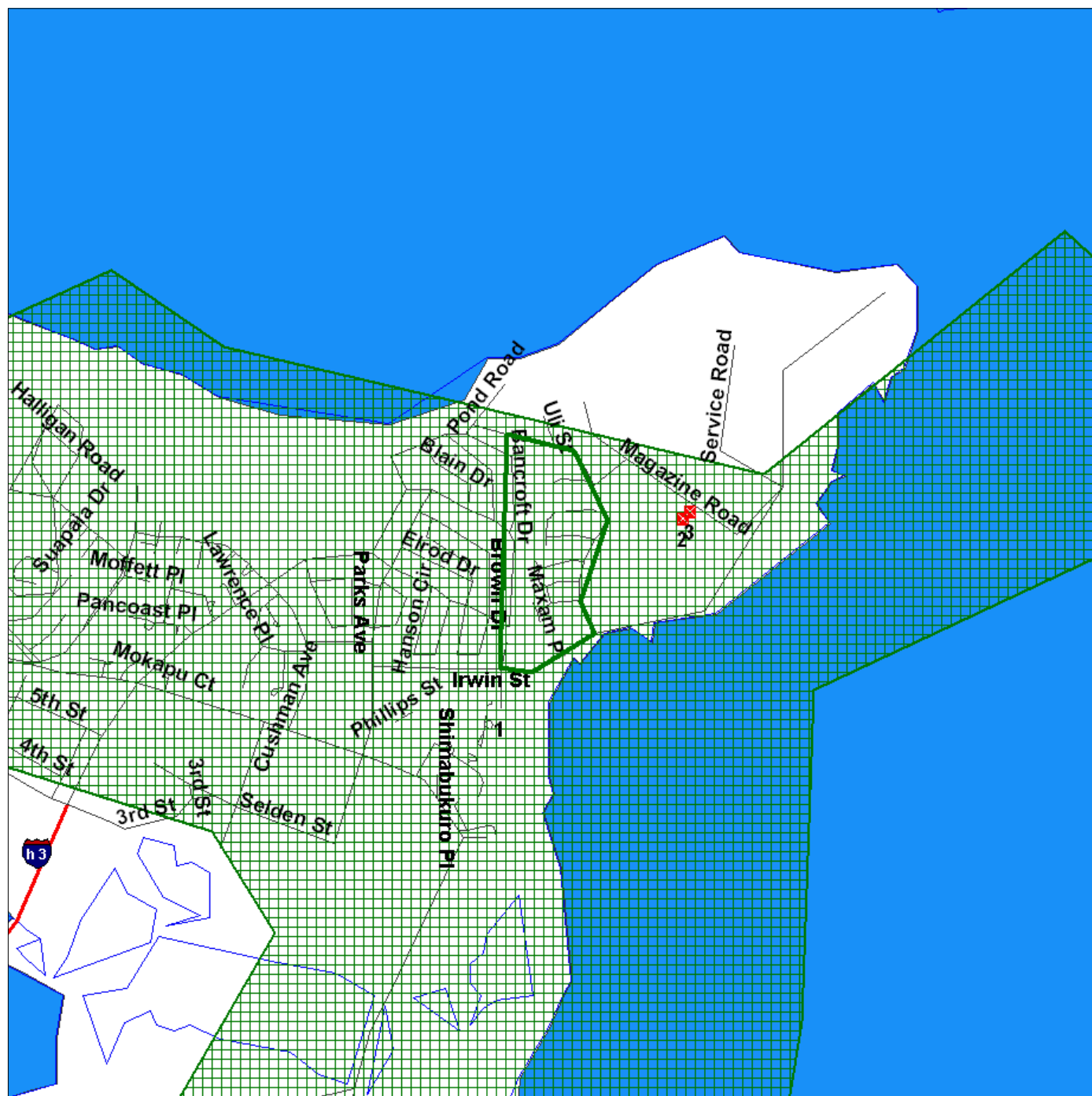


Environmental FirstSearch

1 Mile Radius from Area
Single Map:



ULUPAU , KAILUA HI 96734

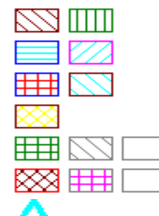


Source: U.S. Census TIGER Files

Area Polygon
Identified Site, Multiple Sites, Receptor
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste
Triballand.....
National Historic Sites and Landmark Sites
Railroads



Area of Critical Environmental Concern (ACEC), Protected Open Spaces
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool
Floodplains: 100 Year, 500 Year
Wetlands
Fed. Land Use: Wilderness Areas, Wildlife Preserves
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..
Federal Wells



Appendix A

ENVIRONMENTAL DATABASE REPORT

TRACK ► INFO SERVICES, LLC

Environmental FirstSearch™ Report

Target Property: ulupau

ULUPAU

KAILUA HI 96734

Job Number: 052207

PREPARED FOR:

Parsons

100 West Walnut Street

Pasadena, CA 91124

05-24-07



Tel: (866) 664-9981

Fax: (818) 249-4227

Environmental FirstSearch Search Summary Report

Target Site: ULUPAU
KAILUA HI 96734

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	03-08-07	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	03-08-07	0.50	0	0	0	0	-	0	0
CERCLIS	Y	03-08-07	0.50	0	0	0	0	-	0	0
NFRAP	Y	03-08-07	0.50	0	0	0	0	-	0	0
RCRA COR ACT	Y	06-06-06	1.00	0	0	0	0	0	0	0
RCRA TSD	Y	06-06-06	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	06-06-06	0.25	0	0	0	-	-	0	0
RCRA NLR	Y	06-06-06	0.12	0	0	-	-	-	0	0
Federal IC / EC	Y	05-02-07	0.25	0	0	0	-	-	0	0
ERNS	Y	12-31-06	0.12	0	0	-	-	-	0	0
Tribal Lands	Y	12-01-05	1.00	0	0	0	0	0	0	0
State/Tribal Sites	Y	07-24-06	1.00	0	0	0	0	0	0	0
State/Tribal SWL	Y	NA	0.50	0	0	0	0	-	0	0
State/Tribal LUST	Y	07-28-06	0.50	0	0	0	0	-	0	0
State/Tribal UST/AST	Y	08-04-06	0.25	0	0	0	-	-	0	0
State/Tribal EC	Y	NA	0.25	0	0	0	-	-	0	0
State/Tribal IC	Y	07-24-06	0.25	0	0	0	-	-	0	0
State/Tribal VCP	Y	07-24-06	0.50	0	0	0	0	-	0	0
State/Tribal Brownfields	Y	07-24-06	0.50	0	0	0	0	-	0	0
State ACEC	Y	NA	0.50	0	0	0	0	-	0	0
Wetlands	Y	NA	0.50	0	0	0	0	-	0	0
Floodplains	Y	NA	0.50	0	0	0	0	-	0	0
Historic Landmarks	Y	11-17-05	0.50	0	0	0	0	-	0	0
Federal Land Use	Y	08-01-06	0.50	1	0	0	0	-	0	1
Federal Wells	Y	12-28-06	0.50	0	0	0	0	-	0	0
FAA/FTC Towers	Y	01-12-07	0.25	0	0	2	-	-	0	2
NPDES	Y	12-15-06	0.25	0	0	0	-	-	0	0
FINDS	Y	11-01-06	0.25	0	0	0	-	-	0	0
TRIS	Y	11-10-06	0.25	0	0	0	-	-	0	0

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to TRACK Info Services, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in TRACK Info Services's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although TRACK Info Services uses its best efforts to research the actual location of each site, TRACK Info Services does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of TRACK Info Services's services proceeding are signifying an understanding of TRACK Info Services's searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

- Continued on next page -

Environmental FirstSearch Search Summary Report

Target Site: ULUPAU
KAILUA HI 96734

FirstSearch Summary

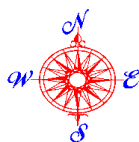
Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
HMIRS	Y	04-16-07	0.25	0	0	0	-	-	0	0
NCDB	Y	09-22-06	0.25	0	0	0	-	-	0	0
PADS	Y	10-17-06	0.25	0	0	0	-	-	0	0
Releases	Y	12-31-06	0.25	0	0	0	-	-	0	0
Federal Other	Y	03-25-07	0.25	0	0	0	-	-	0	0
- TOTALS -				1	0	2	0	0	0	3

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to TRACK Info Services, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in TRACK Info Services's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

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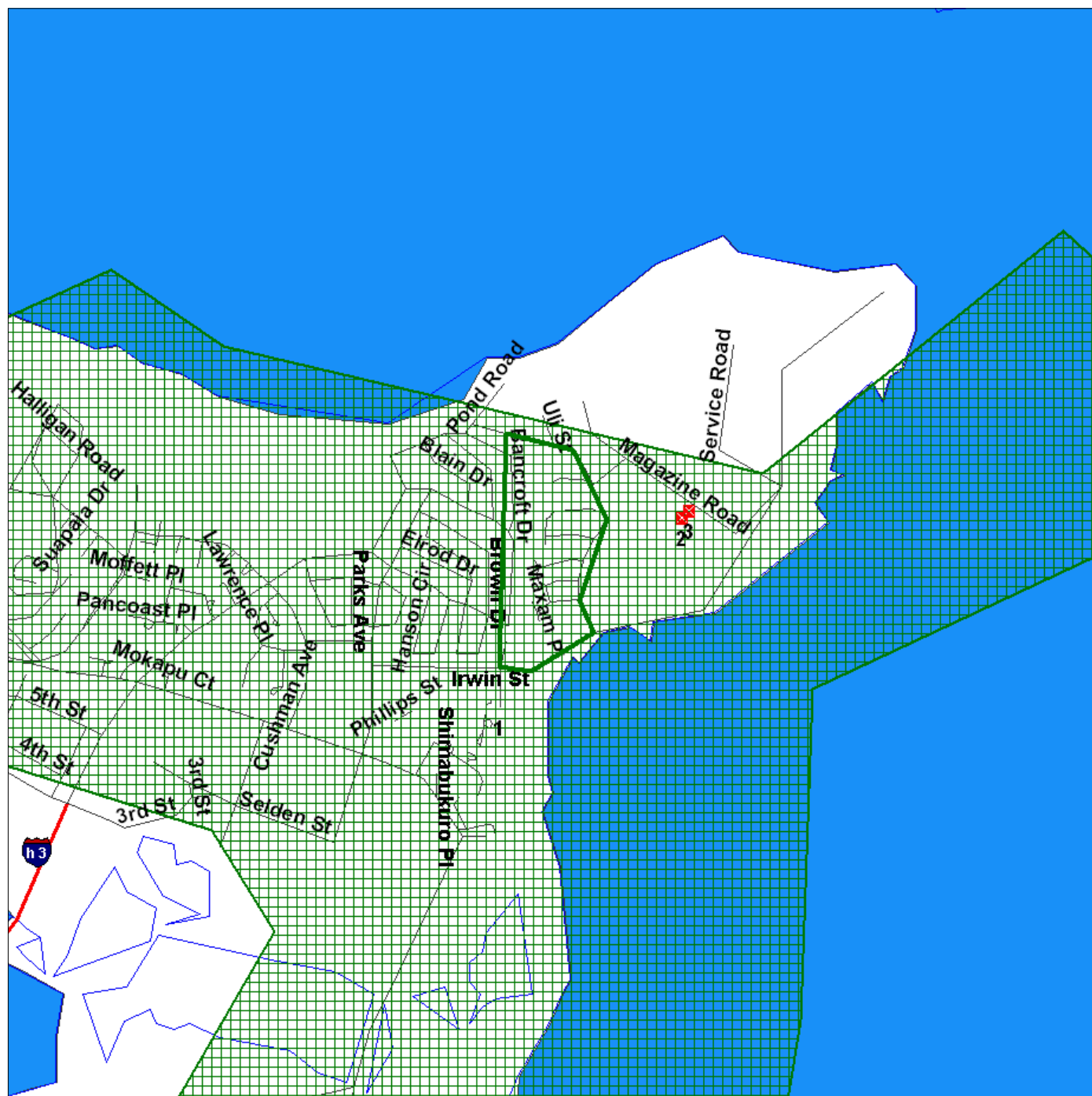


Environmental FirstSearch

1 Mile Radius from Area
Single Map:



ULUPAU , KAILUA HI 96734

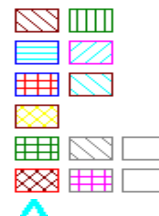


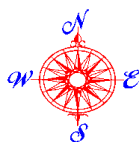
Source: U.S. Census TIGER Files

Area Polygon
Identified Site, Multiple Sites, Receptor
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste
Triballand.....
National Historic Sites and Landmark Sites
Railroads



Area of Critical Environmental Concern (ACEC), Protected Open Spaces
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool
Floodplains: 100 Year, 500 Year
Wetlands
Fed. Land Use: Wilderness Areas, Wildlife Preserves
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..
Federal Wells





Environmental FirstSearch

1 Mile Radius from Area
ASTM-05: NPL, RCRA COR, STATE



ULUPAU , KAILUA HI 96734

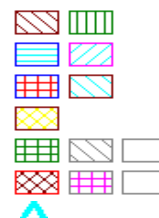


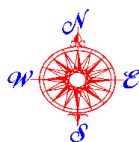
Source: U.S. Census TIGER Files

Area Polygon
Identified Site, Multiple Sites, Receptor
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste
Triballand.....
National Historic Sites and Landmark Sites
Railroads



Area of Critical Environmental Concern (ACEC), Protected Open Spaces
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool
Floodplains: 100 Year, 500 Year
Wetlands
Fed. Land Use: Wilderness Areas, Wildlife Preserves
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..
Federal Wells



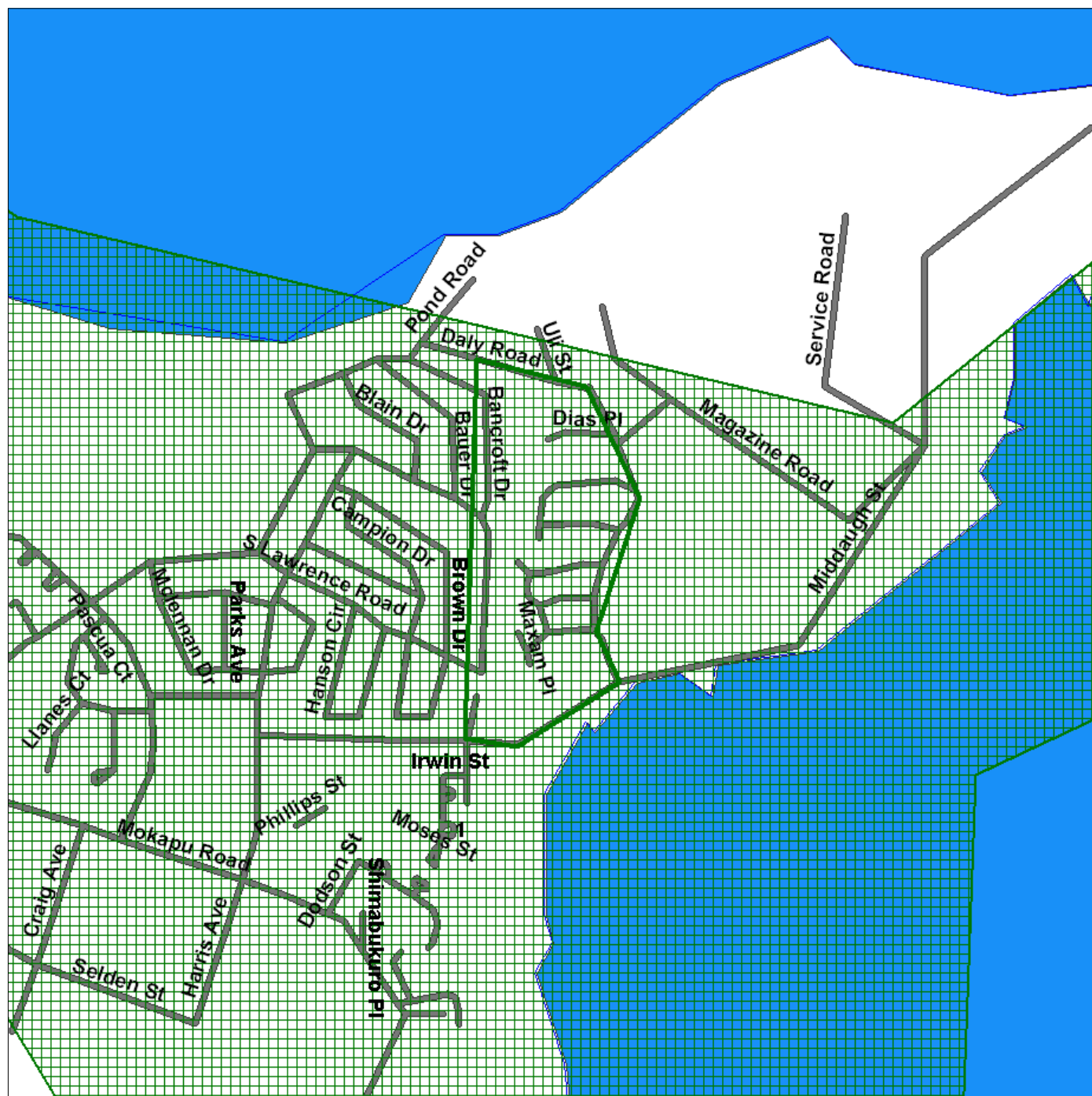


Environmental FirstSearch

.5 Mile Radius from Area
ASTM-05: Multiple Databases



ULUPAU , KAILUA HI 96734

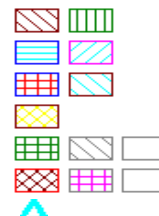


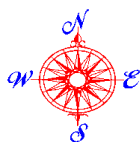
Source: U.S. Census TIGER Files

Area Polygon
Identified Site, Multiple Sites, Receptor
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste
Triballand.....
National Historic Sites and Landmark Sites
Railroads



Area of Critical Environmental Concern (ACEC), Protected Open Spaces
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool
Floodplains: 100 Year, 500 Year
Wetlands
Fed. Land Use: Wilderness Areas, Wildlife Preserves
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..
Federal Wells





Environmental FirstSearch

.25 Mile Radius from Area
ASTM-05: Multiple Databases



ULUPAU , KAILUA HI 96734

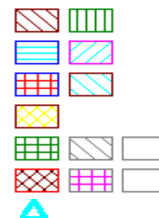


Source: U.S. Census TIGER Files

Area Polygon
Identified Site, Multiple Sites, Receptor
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste
Triballand.....
National Historic Sites and Landmark Sites
Railroads



Area of Critical Environmental Concern (ACEC), Protected Open Spaces
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool
Floodplains: 100 Year, 500 Year
Wetlands
Fed. Land Use: Wilderness Areas, Wildlife Preserves
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..
Federal Wells





Environmental FirstSearch

.12 Mile Radius from Area
ASTM-05: ERNS, RCRANLR



ULUPAU , KAILUA HI 96734

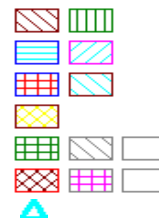


Source: U.S. Census TIGER Files

Area Polygon
Identified Site, Multiple Sites, Receptor
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste
Triballand.....
National Historic Sites and Landmark Sites
Railroads



Area of Critical Environmental Concern (ACEC), Protected Open Spaces
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool
Floodplains: 100 Year, 500 Year
Wetlands
Fed. Land Use: Wilderness Areas, Wildlife Preserves
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..
Federal Wells



***Environmental FirstSearch
Site Information Report***

Request Date: 05-24-07
Requestor Name: (b) (6)
Standard: ASTM-05

Search Type: AREA
0.12 sq mile(s)
Job Number: 052207
Filtered Report

Target Site: ULUPAU
KAILUA HI 96734

Demographics

Sites: 3	Non-Geocoded: 0	Population: NA
Radon: -1.9 - 1.6 PCI/L		

Site Location

	<u>Degrees (Decimal)</u>	<u>Degrees (Min/Sec)</u>		<u>UTMs</u>
Longitude:	-157.738921	-157:44:20	Easting:	630673.838
Latitude:	21.451803	21:27:6	Northing:	2372537.675
			Zone:	4

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 0 Mile(s)

Services:

ZIP		ST	Dist/Dir	Sel
Code	City Name			

	Requested?	Date
Sanborns	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search/Env Liens	No	
Municipal Reports	No	
Online Topos	No	

***Environmental FirstSearch
Sites Summary Report***

Target Property: ULUPAU
 KAILUA HI 96734

JOB: 052207

TOTAL: 3 **GEOCODED:** 3 **NON GEOCODED:** 0 **SELECTED:** 3

Page No.	ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	1	LANDUSE	MARINE CORPS DOD KANEOHE MARINE CO 45965	HI	0.00 --	1
1	2	TOWERS	BLANK 81-AWP-810-OE/ASR-DE	KANEOHE HI	0.19 NE	2
2	3	TOWERS	BLANK 79-APC-28-OE/ASR-DE	KANOHE HI	0.21 NE	3

***Environmental FirstSearch
Site Detail Report***

Target Property: ULUPAU
KAILUA HI 96734

JOB: 052207

LANDUSE

SEARCH ID: 1 **DIST/DIR:** 0.00 -- **MAP ID:** 1

NAME: MARINE CORPS DOD KANEOHE MARINE CORPS AIR STATION	REV: 1/27/05
ADDRESS: HI	ID1: 45965
	ID2:
CONTACT:	STATUS:
	PHONE:

FEDERAL LAND INFORMATION

NAME:	KANEOHE MARINE CORPS AIR STATION
FEATURE:	MARINE CORPS DOD
ADMINISTERING AGENCY:	DOD
STATE FIPS:	15
AREA:	0.001
PERIMETER:	0.162

TOWERS

SEARCH ID: 2 **DIST/DIR:** 0.19 NE **MAP ID:** 2

NAME: BLANK	REV: 01/12/07
ADDRESS: KANEOHE HI	ID1: 81-AWP-810-OE
	ID2:
CONTACT:	STATUS: ASR-DE
	PHONE:

ANTENNA STRUCTURE REGISTRATION - FAA DETERMINATION RECORDS

The Antenna Structure Registration database contains antenna structures that generally are more than 60.96 meters(200 feet) in height or are located near an airport. This record does not appear in the ASR registration records but does appear in the FAA Determination Records for the ASR database. Records in the FAA Determination Database may not have been built.

FAA DATE ISSUED:	1/1/1981
FAA DATE KEYED:	
FAA DATE EXPIRATION:	
DATE ACTION:	6/9/1982
FAA FINAL DATE:	
GROUND ELEVATION:	71.9
OVERALL HEIGHT OF STRUCTURE:	24.4
OVERALL HEIGHT AMSL:	96.3
FAA STUDY NUMBER:	81-AWP-810-OE
FAA CIRCULAR NUMBER:	

Environmental FirstSearch

Site Detail Report

Target Property: ULUPAU
KAILUA HI 96734

JOB: 052207

TOWERS

SEARCH ID: 3 **DIST/DIR:** 0.21 NE **MAP ID:** 3

NAME: BLANK **REV:** 01/12/07
ADDRESS: KANOHE HI **ID1:** 79-APC-28-OE
ID2:
STATUS: ASR-DE
CONTACT: **PHONE:**

ANTENNA STRUCTURE REGISTRATION - FAA DETERMINATION RECORDS

The Antenna Structure Registration database contains antenna structures that generally are more than 60.96 meters(200 feet) in height or are located near an airport. This record does not appear in the ASR registration records but does appear in the FAA Determination Records for the ASR database. Records in the FAA Determination Database may not have been built.

FAA DATE ISSUED: 7/12/1979
FAA DATE KEYED:
FAA DATE EXPIRATION:
DATE ACTION: 11/9/2000
FAA FINAL DATE:
GROUND ELEVATION: 97.5
OVERALL HEIGHT OF STRUCTURE: 10.1
OVERALL HEIGHT AMSL: 107.6
FAA STUDY NUMBER: 79-APC-28-OE
FAA CIRCULAR NUMBER:

Environmental FirstSearch Descriptions

NPL: EPA NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money.

A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

FINAL - Currently on the Final NPL

PROPOSED - Proposed for NPL

NPL DELISTED: EPA NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

DELISTED - Deleted from the Final NPL

CERCLIS: EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.

PART OF NPL- Site is part of NPL site

DELETED - Deleted from the Final NPL

FINAL - Currently on the Final NPL

NOT PROPOSED - Not on the NPL

NOT VALID - Not Valid Site or Incident

PROPOSED - Proposed for NPL

REMOVED - Removed from Proposed NPL

SCAN PLAN - Pre-proposal Site

WITHDRAWN - Withdrawn

NFRAP: EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

NFRAP – No Further Remedial Action Plan

P - Site is part of NPL site

D - Deleted from the Final NPL

F - Currently on the Final NPL

N - Not on the NPL

O - Not Valid Site or Incident

P - Proposed for NPL

R - Removed from Proposed NPL

S - Pre-proposal Site

W – Withdrawn

RCRA COR ACT: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.

RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM

TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.

Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984. Facilities that generate or transport hazardous waste or meet other RCRA requirements.

LGN - Large Quantity Generators

SGN - Small Quantity Generators

VGN – Conditionally Exempt Generator.

Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities.

RCRA NLR: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.

Facilities not currently classified by the EPA but are still included in the RCRAInfo database. Reasons for non classification:

Failure to report in a timely matter.

No longer in business.

No longer in business at the listed address.

No longer generating hazardous waste materials in quantities which require reporting.

Federal IC / EC: EPA BROWNFIELD MANAGEMENT SYSTEM (BMS) - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs.

FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS- Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated.

ERNS: EPA/NRC EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: DOI/BIA INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation.

State/Tribal Brownfields: HI DOH STATE BROWNFIELDS LISTING-The Hawaii Department of Health's Office of Hazard Evaluation and Emergency Response (HEER) inventory of brownfields sites.

State/Tribal Sites: HI DOH STATE RESPONSE LISTING-The Hawaii Department of Health's Office of Hazard Evaluation and Emergency Response (HEER) inventory of facilities, sites, or areas in which HEER has

an interest, has investigated, or may investigate under HRS 128D (includes CERCLIS sites).

State/Tribal VCP: *HI DOH* VOLUNTARY RESPONSE PROGRAM LISTING-The Hawaii Department of Health's Office of Hazard Evaluation and Emergency Response (HEER) inventory of sites participating in the state's Voluntary Response Program.

State/Tribal IC: *HI DOH* INSTITUTIONAL CONTROLS LISTING-The Hawaii Department of Health's Office of Hazard Evaluation and Emergency Response (HEER) inventory of sites with institutional controls.

State/Tribal LUST: *HI DOH* LEAKING UNDERGROUND STORAGE TANKS-The Hawaii Department of Health's inventory of sites with leaking underground storage tanks.

State/Tribal UST/AST: *HI DOH* UNDERGROUND STORAGE TANKS- The Hawaii Department of Health's inventory of underground storage tanks.

State ACEC: *USFWS* US FISH AND WILDLIFE CONTACT INFORMATION - database of contact information for the US Fish and Wildlife Service loaded by zipcode.

Wetlands: *US FWS* NATIONAL WETLANDS INVENTORY (NWI) - database of information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. This data is available for select areas of the United States.

Floodplains: *FEMA* FLOODPLAINS – database of 100 year and 500 year flood zone boundaries for select counties in the United States

Historic Landmarks: *NPS* NATIONAL REGISTRY OF HISTORIC PLACES DATABASE - The nation's official list of cultural resources worthy of preservation. Properties listed include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.

Federal Land Use: *USGS/EPA/FWS* FEDERAL LANDS OF THE UNITED STATES - Database of lands owned or administered by the Federal Government, including the Bureau of Land Management, the Bureau of Reclamation, the U.S. Department of Agriculture Forest Service, the Department of Defense, the U.S. Fish and Wildlife Service, the National Park Service, the Tennessee Valley Authority, and other agencies. Only areas of 640 acres or more are included. Descriptive information includes the name and type of the Federal land and the administering agency.

ENDANGERED SPECIES PROTECTION PROGRAM DATABASE – List of the Endangered Species by county and the species status./n NATIONAL WILDLIFE REGUGE DATA - database of boundaries for National Wildlife Refuges, National Fish Hatcheries, and USFWS administrative sites. Contains information regarding refuge name and contact information.

Federal Wells: *USGS* UNITED STATES GROUND-WATER SITES INVENTORY - Database of more than 850,000 records of wells, springs, test holes, tunnels, drains, and excavations in the United States.

FAA/FTC Towers: *FAA/FCC* Tower - database encompasses three sources of information from the Federal Aviation Administration and the Federal Communications Commission. FAA data includes the Digital Obstacle File which contains obstruction data for man made objects that affect domestic aeronautical charting products. FCC data includes the Wireless Telecommunication Bureau's Universal Licensing System which contains the Antenna Structure Database and the Cellular Tower Database. FCC data also includes the Mass Media Bureau's Consolidated Database System which includes engineering data for AM, FM, and Television broadcasting stations.

NPDES: *EPA* THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM - Database of permitted facilities receiving and discharging effluents to and from a natural source where treatment of the effluent is monitored.

FINDS: *EPA* FACILITY INDEX SYSTEM(FINDS)/FACILITY REGISTRY SYSTEM(FRS) - The index of identification numbers associated with a property or facility which the EPA has investigated or has been made aware of in conjunction with various regulatory programs. Each record indicates the EPA office that may have files on the site or facility. A Facility Registry System site has an FRS in the status field.

TRIS: *EPA* TOXIC RELEASE INVENTORY SYSTEM (TRIS)– Database that contains information on

toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990.

HMIRS: *US DOT* HAZARDOUS MATERIALS INCIDENT RESPONSE SYSTEM - Database of information regarding materials, packaging, and a description of events for tracked incidents.

NCDB: *EPA* NATIONAL COMPLIANCE DATA BASE SYSTEM - Database of regional compliance and enforcement activity and manages the Pesticides and Toxic Substances Compliance and Enforcement program at a national level. The system tracks all compliance monitoring and enforcement activities from the time an inspector conducts an inspection until the time the inspector closes or the case settles the enforcement action. NCDB is the national repository of the 10 regional and Headquarters FIFRA/TSCA Tracking System (FTTS). Data collected in the regional FTTS is transferred to NCDB to support the need for monitoring national performance of regional programs.

PADS: *EPA* DATABASE OF PCB HANDLERS - Database of PolyChlorinatedBiPhenol generators, transporters, storers and/or disposers that are required to register with the EPA. This database indicates the type of handler and registration number. Also included is the PCB Transformer Registration Database.

RADON: *NTIS* NATIONAL RADON DATABASE - EPA radon data from 1990-1991 national radon project collected for a variety of zip codes across the United States.

Federal Other: *EPA* SECTION SEVEN TRACKING SYSTEM (SSTS) – database of registration and production data for facilities which manufacture pesticides.

Environmental FirstSearch Database Sources

NPL: EPA Environmental Protection Agency

Updated quarterly

NPL DELISTED: EPA Environmental Protection Agency

Updated quarterly

CERCLIS: EPA Environmental Protection Agency

Updated quarterly

NFRAP: EPA Environmental Protection Agency.

Updated quarterly

RCRA COR ACT: EPA Environmental Protection Agency.

Updated quarterly

RCRA TSD: EPA Environmental Protection Agency.

Updated quarterly

RCRA GEN: EPA Environmental Protection Agency.

Updated quarterly

RCRA NLR: EPA Environmental Protection Agency

Updated quarterly

Federal IC / EC: EPA Environmental Protection Agency

Updated quarterly

ERNS: EPA/NRC Environmental Protection Agency

Updated semi-annually

Tribal Lands: DOI/BIA United States Department of the Interior

Updated annually

State/Tribal Brownfields: HI DOH Office of Hazard Evaluation and Emergency Response, Hawaii State

Department of Health

Updated biannually

State/Tribal Sites: *HI DOH* Office of Hazard Evaluation and Emergency Response, Hawaii State Department of Health

Updated biannually

State/Tribal VCP: *HI DOH* Office of Hazard Evaluation and Emergency Response, Hawaii State Department of Health

Updated biannually

State/Tribal IC: *HI DOH* Office of Hazard Evaluation and Emergency Response, Hawaii State Department of Health

Updated biannually

State/Tribal LUST: *HI DOH* The Hawaii Department of Health, Solid and Hazardous Waste Branch

Updated biannually

State/Tribal UST/AST: *HI DOH* The Hawaii Department of Health, Solid and Hazardous Waste Branch

Updated biannually

State ACEC: *USFWS* United States Fish and Wildlife Services

Updated semi-annually

Wetlands: *US FWS* U.S. Fish and Wildlife Service

Updated when available

Floodplains: *FEMA* Federal Emergency Management Agency

Updated when available

Historic Landmarks: *NPS* National Park Service

Updated annually

Federal Land Use: *USGS/EPA/FWS* U.S. Geological Survey

Updated annually

Federal Wells: *USGS* United States Geographical Survey.

Updated annually

FAA/FTC Towers: *FAA/FCC* Federal Aviation Administration

Updated

NPDES: *EPA* Environmental Protection Agency

Updated quarterly

FINDS: *EPA* Environmental Protection Agency

Updated annually

TRIS: *EPA* Environmental Protection Agency.

Updated quarterly

HMIRS: *US DOT* US Department of Transportation

Updated quarterly

NCDB: *EPA* Environmental Protection Agency

Updated quarterly

PADS: *EPA* Environmental Protection Agency

Updated quarterly

RADON: *NTIS* Environmental Protection Agency, National Technical Information Services

Updated periodically

Federal Other: *EPA* Environmental Protection Agency

Updated quarterly

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: ULUPAU
 KAILUA HI 96734

JOB: 052207

Street Name	Dist/Dir	Street Name	Dist/Dir
Daly Pl	0.00 --		
S Lawrence Rd	0.00 --		
Dias Pl	0.00 --		
NOCOVERAGE	0.00 --		
Daly Rd	0.00 --		
Bancroft Dr	0.00 --		
SOUTH Lawrence Rd	0.00 --		
Bordelon Loop	0.00 --		
Johnson St	0.00 --		
Connor Loop	0.00 --		
Middaugh St	0.00 --		
Maxam Pl	0.00 --		
Uli St	0.00 --		
Lawrence Dr	0.00 --		
Bauer Dr	0.02 NW		
Brown Dr	0.03 NW		
Fleming Cir	0.03 NW		
Irwin St	0.06 SW		
Campion Dr	0.07 NW		
Elrod Dr	0.07 NW		
Titcomb Cir	0.07 SW		
Hawkins St	0.07 SW		
Pond Rd	0.08 NW		
Blain Dr	0.09 NW		
Magazine Rd	0.12 NE		
Hawkins Pl	0.12 SW		
Hanson Cir	0.13 NW		
Canney Cir	0.16 SW		
Moses St	0.17 SW		
Harris Ave	0.18 NW		
Harris Ct	0.24 NW		
Phillips St	0.24 SW		
Dodson St	0.25 SW		
Cochran St	0.25 SW		

Appendix B

HISTORICAL AERIAL PHOTOGRAPHS



Source: *Track Info Services*



NO SCALE

1950 Historical Aerial Photograph
Ulupau Family Housing Area

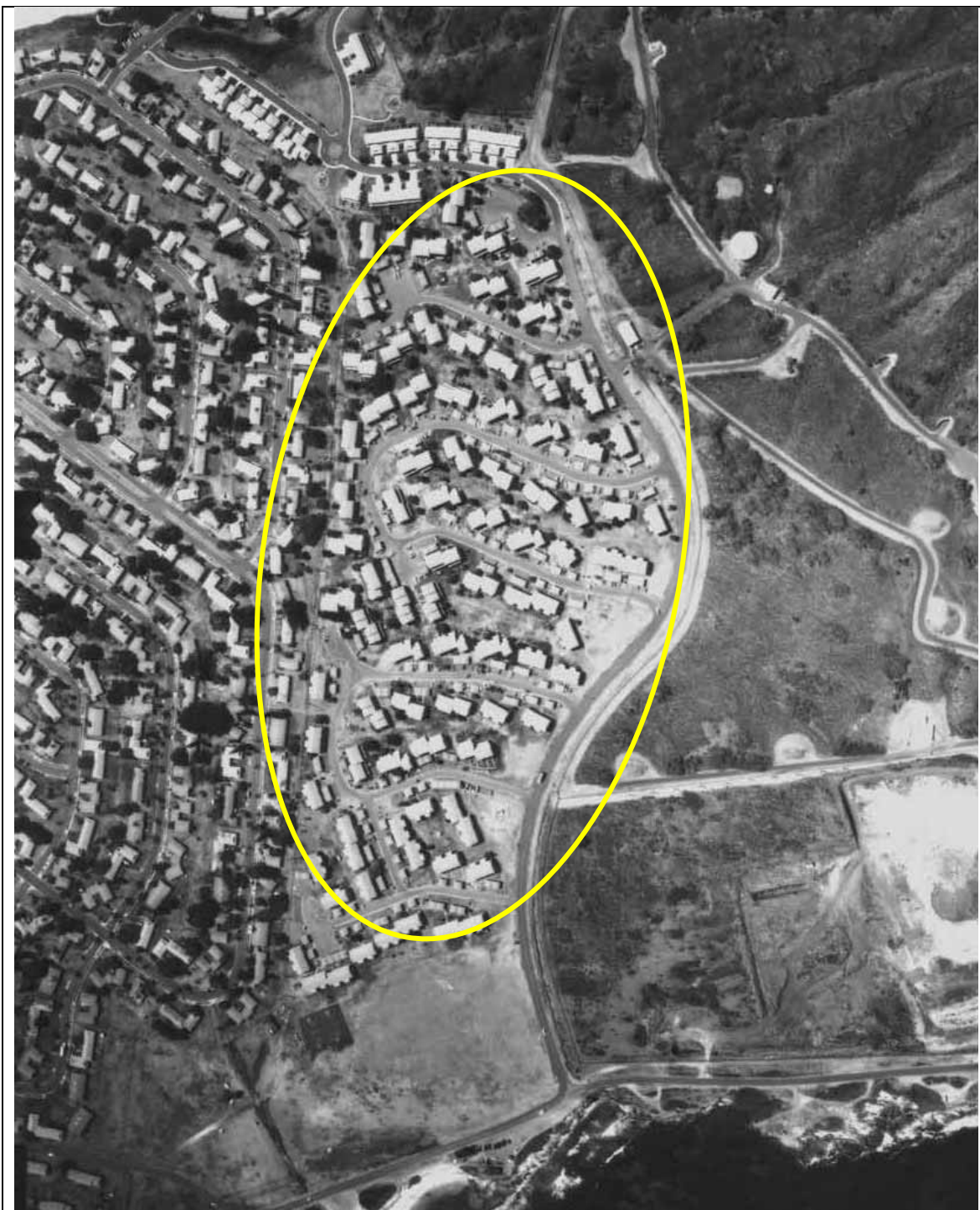


Source: *Track Info Services*



NO SCALE

1969 Historical Aerial Photograph
Ulupau Family Housing Area



Source: *Track Info Services*

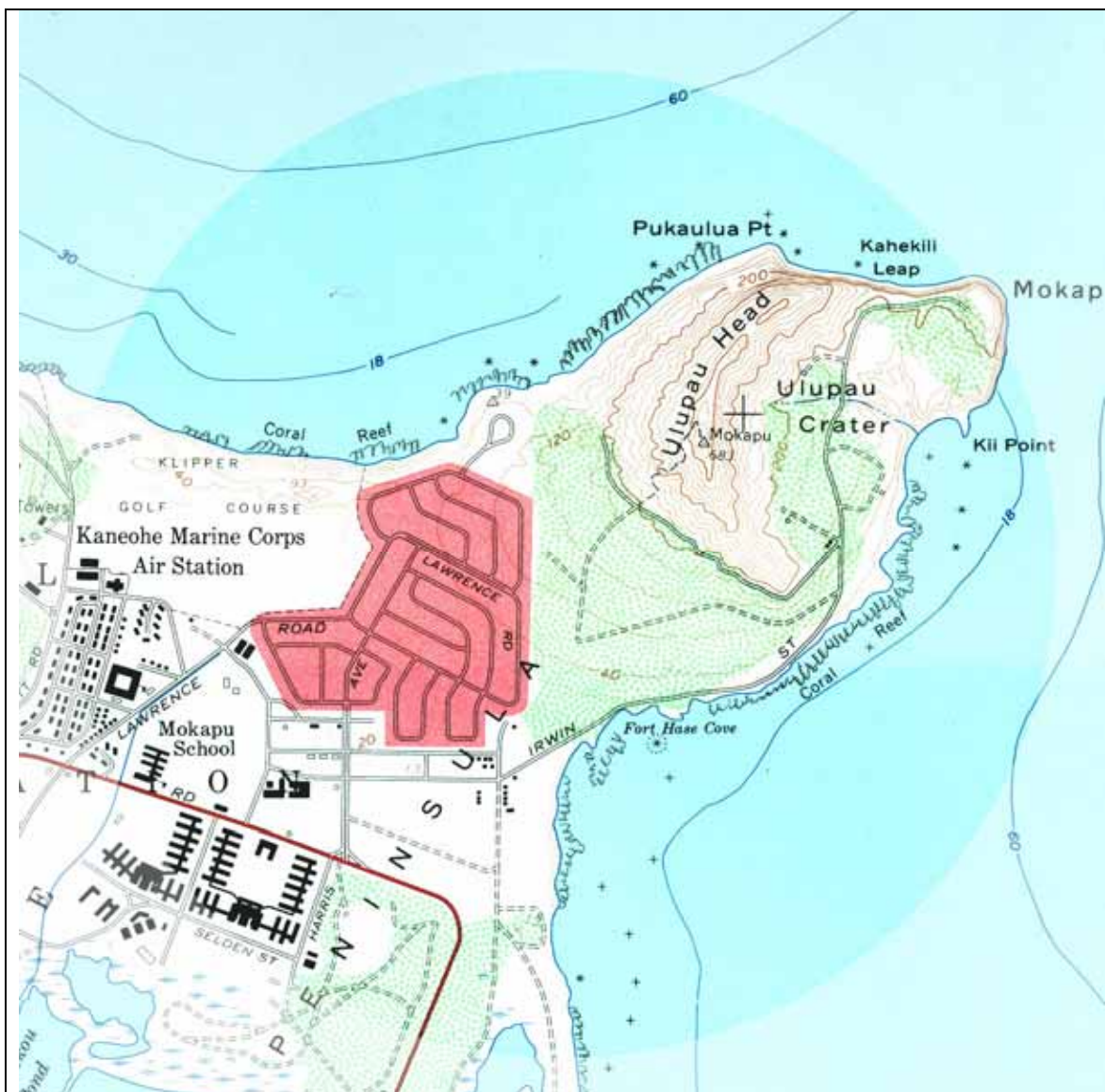


NO SCALE

1999 Historical Aerial Photograph
Ulupau Family Housing Area

Appendix C

HISTORICAL TOPOGRAPHICAL MAPS



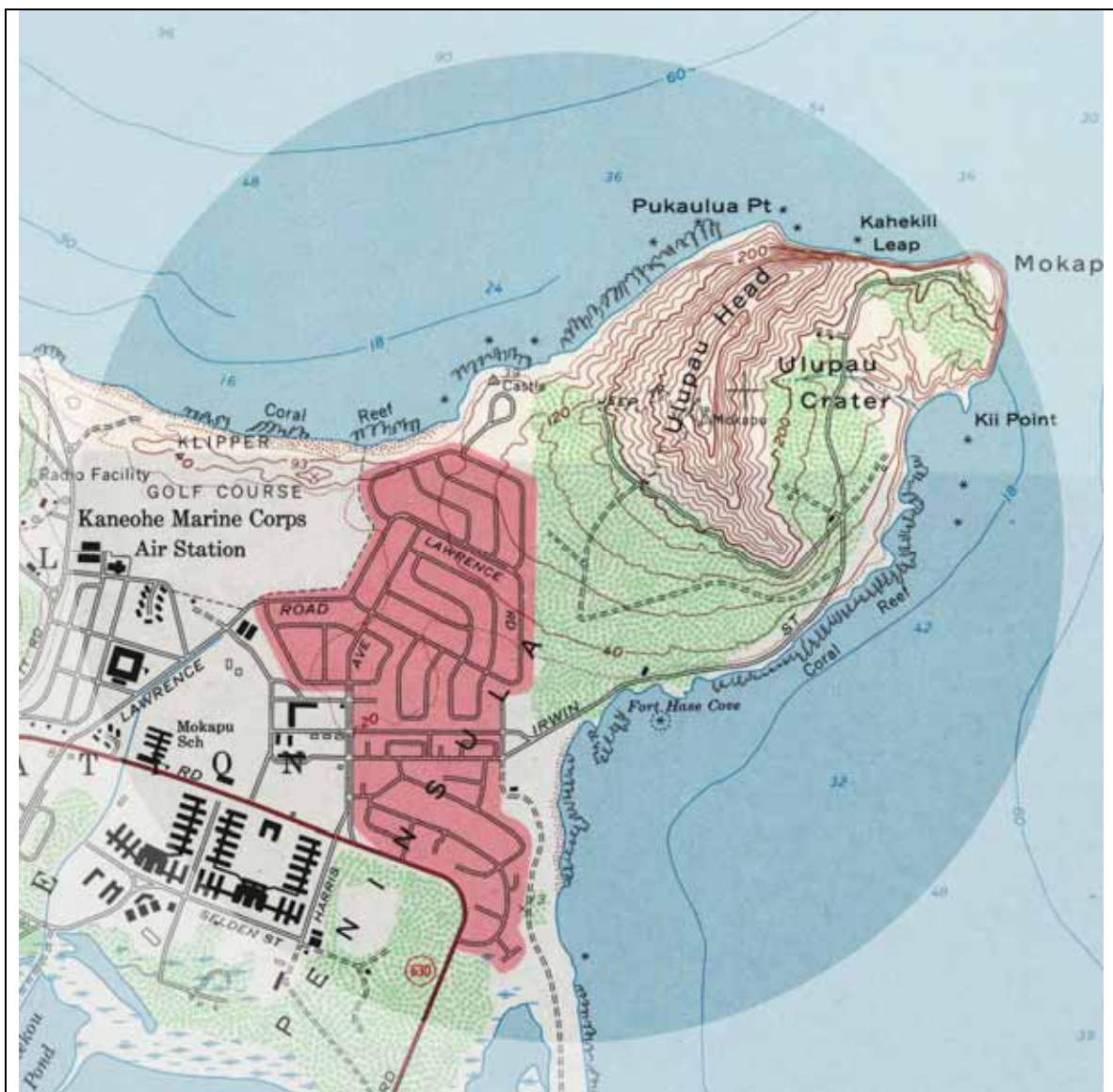
Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1959 (modified)



NORTH

1 inch = 1667 feet
SCALE

1959 Historical Topographic Map
Ulupau Family Housing Area

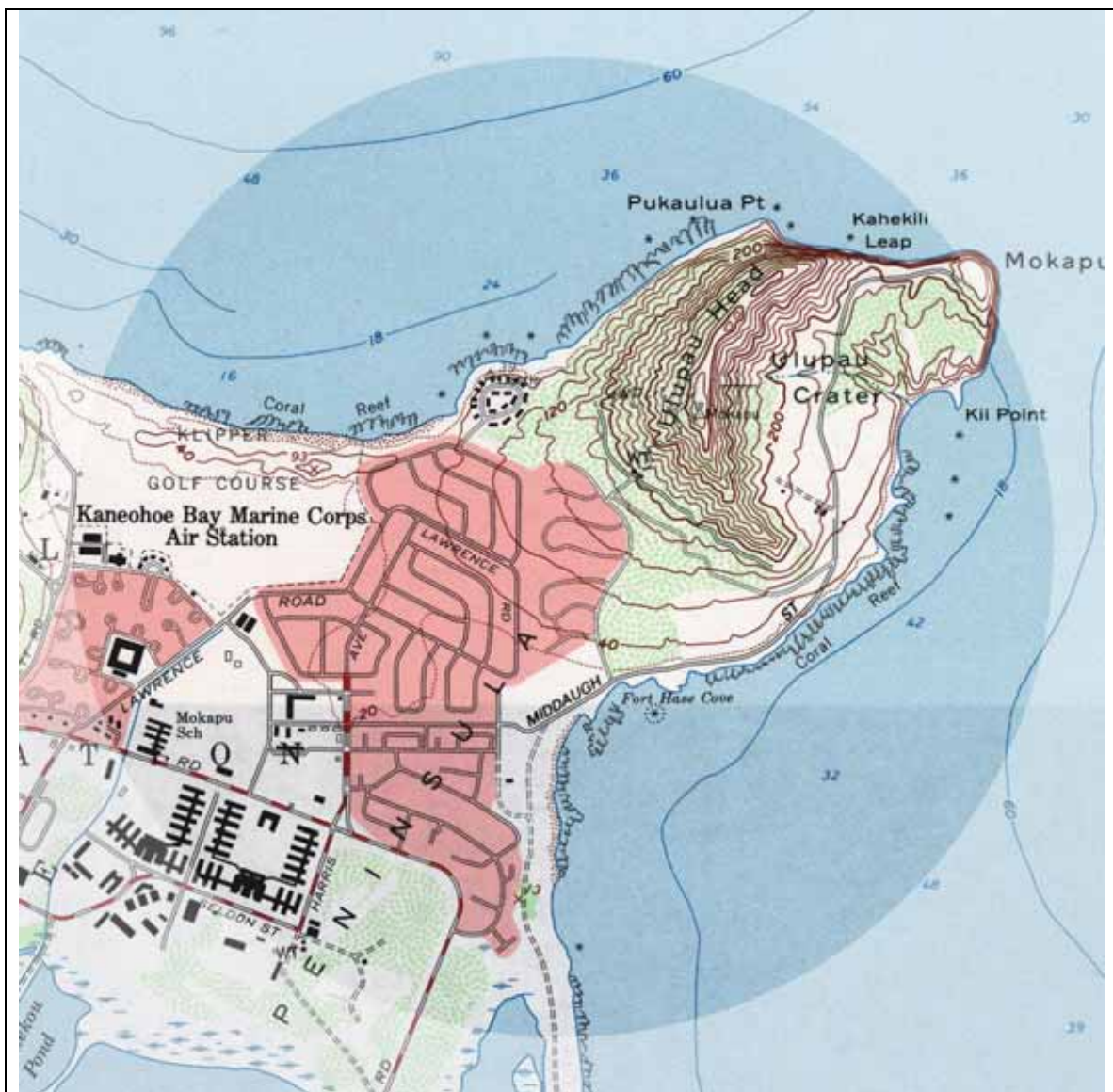


Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1968 (modified)



1 inch = 1667 feet
SCALE

1968 Historical Topographic Map
Ulupau Family Housing Area

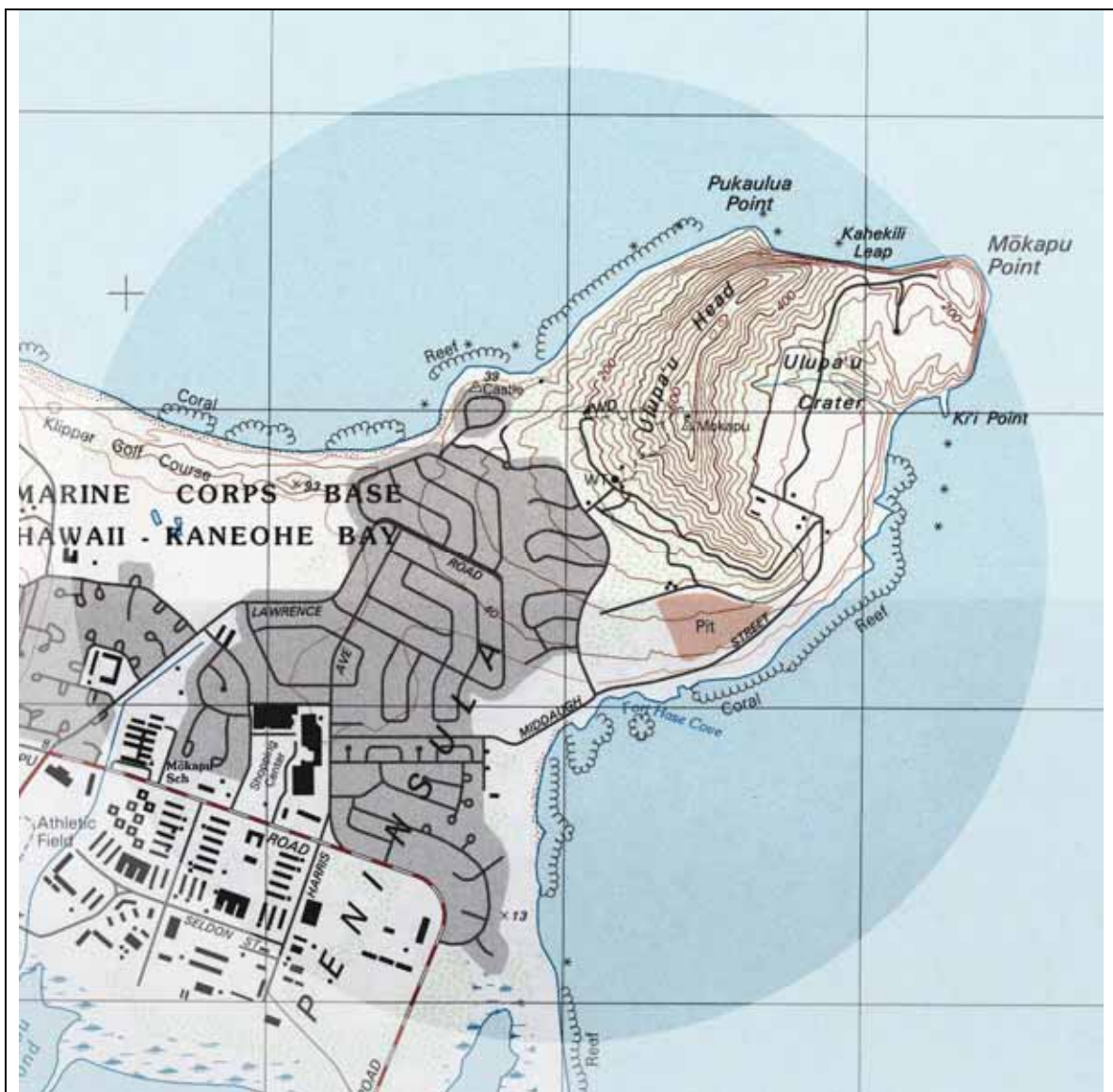


Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1983 (modified)



1 inch = 1667 feet
SCALE

1983 Historical Topographic Map
Ulupau Family Housing Area



Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1998 (modified)



NORTH



1 inch = 1667 feet
SCALE

1998 Historical Topographic Map
Ulupau Family Housing Area